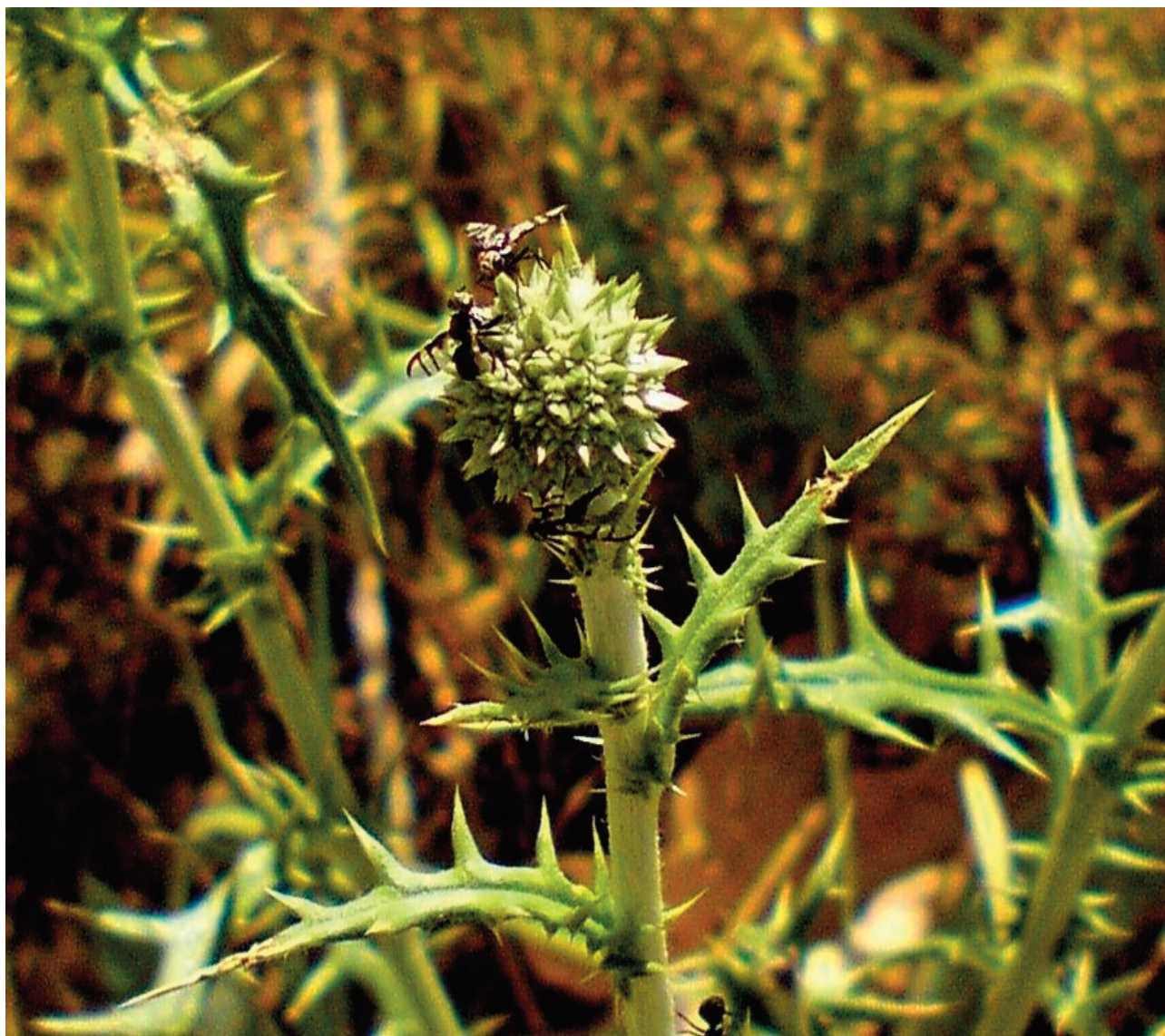




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New Records of Yponomeutoid Moths from Azerbaijan (Lepidoptera, Yponomeutidae, Plutellidae)

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Pljushtch I. G. & Gershenson Z. S. New Records of Yponomeutoid Moths from Azerbaijan (Lepidoptera, Yponomeutidae, Plutellidae).
Summary. *Yponomeuta rorrellus* (Hübner, 1896) and *Ypsolopha sequella* (Clerck, 1759) are recorded from Azerbaijan for the first time. External characters which useful for identification of the both species are discussed.

Key words: Microlepidoptera, moths, Yponomeutidae, Plutellidae, Azerbaijan.

Плющ І. Г. и Гершензон З. С. Новые находки ипономейтоидных молей из Азербайджана (Lepidoptera, Yponomeutidae, Plutellidae). **Резюме.** Впервые для Азербайджана приводятся *Yponomeuta rorrellus* (Hübner, 1896) и *Ypsolopha sequella* (Clerck, 1759). Обсуждаются внешние признаки имаго, необходимые для идентификации этих видов.

Ключевые слова: Microlepidoptera, моли, Yponomeutidae, Plutellidae, Азербайджан.

Плющ І. Г. та Гершензон З. С. Нові знахідки іпономейтоїдних молей з Азербайджану (Lepidoptera, Yponomeutidae, Plutellidae). **Резюме.** Вперше з Азербайджану наведено *Yponomeuta rorrellus* (Hübner, 1896) і *Ypsolopha sequella* (Clerck, 1759). Обговорено зовнішні ознаки імаго, які необхідні для ідентифікації цих видів.

Key words: Microlepidoptera, моли, Yponomeutidae, Plutellidae, Азербайджан.

Introduction

Yponomeutoid moths represent a world wide distributed phytophagous Microlepidopteran families trophically connected with 23 plant families (Gershenson & Ulenberg, 1998). Adults are mostly rather small (wing-span varies from 9 mm to 31 mm). The moths are active at dusk and during the night, whereas during the day-time they are hiding in shady places, particularly under leaves of trees and bushes, so it is rather difficult to catch them. It is possible to attract them by UV light-traps, however yponomeutoids when disturbed often quickly hide among plants and dense grasses near the light source. Their hidden mode of life might be a reason why the diversity of these microlepidopteran species has been insufficiently studies till now. The present paper has aimed to fill this gap and focused on the two species of yponomeutoid moths which are recorded from Azerbaijan for the first time.

Material and Methods

This work is based on the original material collected by the first author in Azerbaijan. Moths were collected at UV light trap in Kalvaz District near Iranian border (38°37'N, 48°21'E) at an elevation of 1,500 m a.s.l.

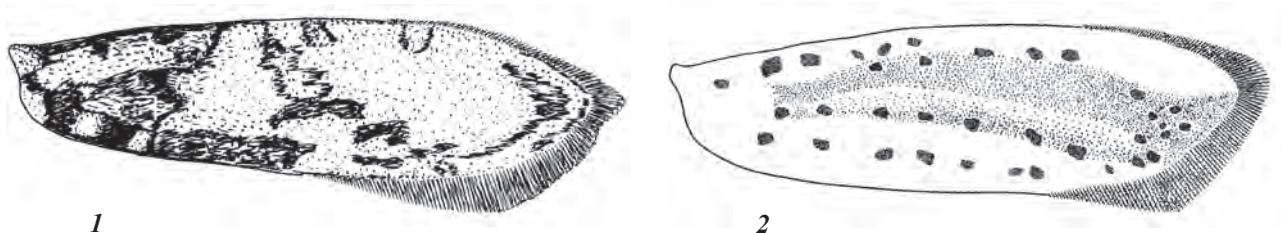
The collected material is deposited in the Department of the General and Applied Entomology at I. I. Schmalhausen Institute of Zoology of the National Academy of Sciences in Kiev, Ukraine.

Concepts of families mentioned in the paper follow Heppner (1998).

Family Yponomeutidae

Yponomeuta rorrellus (Hübner, 1896)

Material: Azerbaijan, Kalvaz District, Talysh, on light, altitude: 1,500 m asl., 17.07.2003, 2♂, 1♀. (I. Pljushtch)



Figs. 1–2. Forewing pattern.

1. *Yponomeuta rorrellus* (Hübner) 2. *Ypsolopha sequella* (Clerck)

General external characters of imago. Wingspan 16–25 mm (♂ and ♀). Head white. Head structure and wing venation as described for the genus (Frieze, 1960; Moriuti, 1977; Gershenson, 1990). Head, palpi, antennae and thorax white. Thorax with five black dots, and one on each tegula. Forewing (Fig. 1) white, suffused with ash-grey and with 25–30 black dots arranged in the three irregular rows, wing apex grey. Hindwing with cilia grey throughout.

Distribution. Europe, W part of the North Caucasus Region (Gershenson & Ulenberg, 1998). Recorded from Azerbaijan for the first time.

Remarks. Externally similar to *Yponomeuta padellus* (Linnaeus, 1758) differing in the features given in the following key.

Key to separate *Yponomeuta rorrellus* and *Y. padellus*

1. Each tegula with one black dot. Forewing white, usually suffused with grey on dorsal area (Fig. 1). Larvae pupate without cocoons in the dense web. Food-plants: different species of willows (*Salix* Linnaeus)
.....*Y. rorrellus* (Hübner)
- Each tegula with two black dots. Forewing white, sometimes suffused with grey along the anterior margin of the wing. Larvae pupate in cocoons. Food-plants: different species of Rosaceae
.....*Y. padellus* (Linnaeus)

Both species do not differ in the structure of the male and female genitalia.

Family Plutellidae

Ypsolopha sequella (Clerck, 1959) (Fig. 2)

Material: Azerbaijan, Kalvaz District, Talysh, 1,500 m asl., at light, 17.07.2003, 3 ♂ (I. Pjushtch).

General external characters. Imago (♂ and ♀). Wingspan 17–22 mm. Head, thorax and background of forewings white. Terminal segment of labial palpus slightly curved, longer or as long as middle segment. Forewing (Fig. 2) with pattern of dark spots and stripes along anterior and posterior margins.

Distribution. Europe, Asia Minor, Israel. Recorded from Azerbaijan for the first time.

Remarks. This species can be easily recognized by forewing pattern. Food-plants: different species of willows (*Salix* Linnaeus).

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The Chorionic Sculpture in Eggs of some Hadeninae (Lepidoptera, Noctuidae) from Ukraine

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Dolinskaya I. V. The chorionic sculpture in eggs of some Hadeninae (Lepidoptera, Noctuidae) from Ukraine. Summary. The eggs of 17 species from 12 genera of some Hadeninae from Ukraine (Noctuidae) are described and illustrated with using scanning electron microscopy. The diagnostic characters of genera and species are selected.

Keywords: Hadeninae, Noctuidae, Lepidoptera, egg, chorion, description, diagnostic characters, scanning electron microscopy.

Долінська І. В. Скульптура хоріона яєць деяких совок підсемейства Hadeninae (Lepidoptera, Noctuidae) фауни України. Резюме. С допомогою скануючого електронного мікроскопа изучены и проиллюстрированы яйца 17 видов из 12 родов Hadeninae (Noctuidae) фауни України. Выделены диагностические признаки для родов и видов.

Ключевые слова: Hadeninae, Noctuidae, Lepidoptera, яйцо, хорион, описание, диагностические признаки, сканирующая электронная микроскопия.

Долінська І. В. Скульптура хоріону яєць деяких совок підроддини Hadeninae (Lepidoptera, Noctuidae) фауни України. Резюме. За допомогою скануючого електронного мікроскопа вперше вивчено та проілюстровано яйця 17 видів з 12 родів Hadeninae (Noctuidae) фауни України. Висвітлено діагностичні ознаки для родів і видів.

Ключові слова: Hadeninae, Noctuidae, Lepidoptera, яйце, хоріон, опис, діагностичні ознаки, скануюча електронна мікроскопія.

Introduction

This work continues a series of articles concerning the morphology of eggs of noctuids from the fauna of Ukraine (Dolinskaya & Geryak, 2010). Subfamily contains 99 species of 32 genera in Ukraine (Klyuchko et al., 2001). Detailed line drawings illustrating the eggs of 48 European species of the subfamily Noctuinae were published by Döring (1955). A more thorough examination of the chorionic structure can be achieved with the use of SEM. Hinton (1981) illustrated the eggs of 5 European Hadeninae species. Sannino & Espinosa (1999) examined eggs of *Mamestra brassicae* Linnaeus from Italy. Salkeld (1984) described and illustrated the eggs of 26 Canadian Hadeninae species. The eggs of 4 Chilean species of Hadeninae were described and illustrated by Angulo & Olivares (1991) and Rodriguez & Angulo (2007).

Material and Methods

The work is based on the original materials collected by the author in Ukraine. The eggs were obtained from females captured in the field. The eggs of 6 species (*Orthosia cerasi* Fabricius, *O. cruda* Denis & Schifferrmüller, *O. populeti* Fabricius, *O. gothica* Linnaeus, *Tholera decimalis* Poda and *Lacanobia w-latinum* Hufnagel) were kindly given by Yu. Geryak (State Natural History Museum, Lviv, Ukraine). The eggs were examined with the use of scanning electron microscopy (SEM).

The Hadeninae species have been determined by Dr. A. Matov (Zoological Institut, St.Petersburg, Russia), Dr. Yu. Budashkin (Karadag Reserve, Crimea, Ukraine) and Mr. Yu. Geryak (State Natural History Museum, Lvov, Ukraine).

Terminology of the eggs according to E. Salkeld (1984). The systematic position of Noctuidae follows Fibiger & Hacker, 2004.

Descriptions

Orthosia cerasi (Fabricius, 1775).

Material. Ukraine, Zakarpatska Region, vic. Beregove, 28.03.2010 (Yu. Geryak).

Characteristics. Egg subspherical (Figs. 1, 2), height 0.5 mm, diameter 0.7 mm (n = 5). Fresh egg pale yellow. As egg develops, it becomes grey with black spot at apical part of egg.

Chorion not ridged. It is marked on two thirds surfaces by cells (longitudinal ridges weakly expressed (Fig. 2). Micropylar area conspicuous. Rosette with 8–11 petalled cells (Fig. 3). The rest cells rounded, with clearly expressed, strong ridges. Cells arranged by regular radial lines. The quantity of lines increases to egg base. Aeropyles clearly expressed at walls junctions (Fig. 4).

***Orthosia cruda* ([Denis & Schiffermüller], 1775)**

Material. Ukraine, Zakarpatska Region, vic. Beregove. 30.03.2010 (Yu. Geryak).

Characteristics. Egg subspherical, height 0.45–0.5 mm, diameter 0.7–0.8 mm (n = 5).

Distinctions from the previous species it is not recorded (Fig. 5).

***Orthosia populeti* (Fabricius, 1781)**

Material. Ukraine, Zakarpatska Region, vic. Beregove, 30.03.2010 (Yu. Geryak).

Characteristics. Egg subspherical, height 0.65–0.7 mm, diameter 0.9 mm (n = 5).

Distinctions from the previous species it is not recorded (Fig. 6).

***Orthosia gothica* (Linnaeus, 1758)**

Material. Ukraine, Zakarpatska Region, vic. Beregove. 30.03.2010 (Yu. Geryak).

Characteristics. Egg subspherical, height 0.55–0.6 mm, diameter 0.7–0.8 mm (n = 5).

Distinctions from the previous species it is not recorded (Figs. 7, 8, 9).

***Orthosia incerta* (Hufnagel, 1766)**

Material. Ukraine, Cherkaska Region, Kaniv Nature Reserve, 2009 (I. Dolinskaya).

Characteristics. Egg subspherical, diameter 0.6–0.8 mm (n = 5). Fresh egg pale yellow. As egg develops, it becomes grey-white with pale brown spot at micropylar area and pale brown stripe on perimeter apical part of egg. Before caterpillar emergence egg becoming taupe.

Remark. Longitudinal ridges much less distinct than at other species (Fig. 10).

***Egira conspicularis* (Linnaeus, 1758)**

Material. Ukraine, Cherkaska Region, Kaniv Nature Reserve. 12.05.2009 (I. Dolinskaya).

Characteristics. Egg subspherical, height 0.4–0.45 mm, diameter 0.7–0.75 mm (n = 5). Fresh egg grey-white, then grey at micropylar area. Before caterpillar emergence egg becoming taupe.

Chorion not ridged. It is marked on two thirds surfaces by cells with weakly expressed longitudinal ridges (Fig. 11). Micropylar area conspicuous. Rosette with 12–13 petalled cells (Fig. 12). Secondary cells long and narrow. The rest cells clearly expressed, polygonal, short and broad. Cells arranged by regular radial lines. The quantity of lines increases to egg base. Aeropyles clearly expressed at walls junctions (Fig. 13).

Oviposition. Eggs laid in single-layer tight clusters where they pressed one to another.

***Tholera decimalis* (Poda, 1761)**

Material. Ukraine, Zakarpatska Region, Rakhiv District, vic. Lug. 17.09.2009 (Yu. Geryak).

Characteristics. Egg subspherical (Figs. 14–16), height 0.7–0.8 mm, diameter 0.9–1.0 mm (n = 5). Chorion white, translucent, micropylar area pale brown.

Chorion faintly ridged. It is marked on two thirds surfaces. Micropylar rosette with 17–19 long and narrow petalled cells and with 3–4 micropylar openings. Secondary cells long and narrow, very weakly expressed (Fig. 17). There are 20–2 longitudinal ridges, radiate from secondary cells. Columnar cells typical, broad and short with weakly expressed longitudinal ridges and transverse walls (Fig. 18). Along all surface of longitudinal ridges and transverse walls densely placed small aeropyles. Chorion wrinkled everywhere (Fig. 19).

***Anarta trifolii* (Hufnagel, 1766)**

Material. Ukraine, Crimea, Karadag Nature Reserve. 4.07.2006 (I. Dolinskaya); Cherkaska Region, Kaniv Nature Reserve, 28.05.2008, 4.05.2009 (I. Dolinskaya).

Characteristics. Egg subspherical (Fig. 20), height 0.5 mm, diameter 0.6–0.8 mm (n = 5).

Fresh egg pale citron colour. As egg develops, at micropylar area of egg appears vinous spot and the same stripe on perimeter apical part of egg. Before caterpillar emergence egg becoming taupe with brown spot at apical part of egg. Chorion white, translucent, white.

Chorion ridged. It is marked on two thirds surfaces. Micropylar rosette elevated with 15–19 long and narrow petalled cells with folded floors and with 6 micropylar openings. Secondary cells typical, long, narrow and pointed (Fig. 21). There are 14–18 of the 39–43 elevated, broad longitudinal ridges radiate from pointed outer ends of secondary cells. Transverse walls narrow, much less distinct than ridges. Aeropyles clearly expressed. Chorion sharply wrinkled everywhere (Fig. 22).

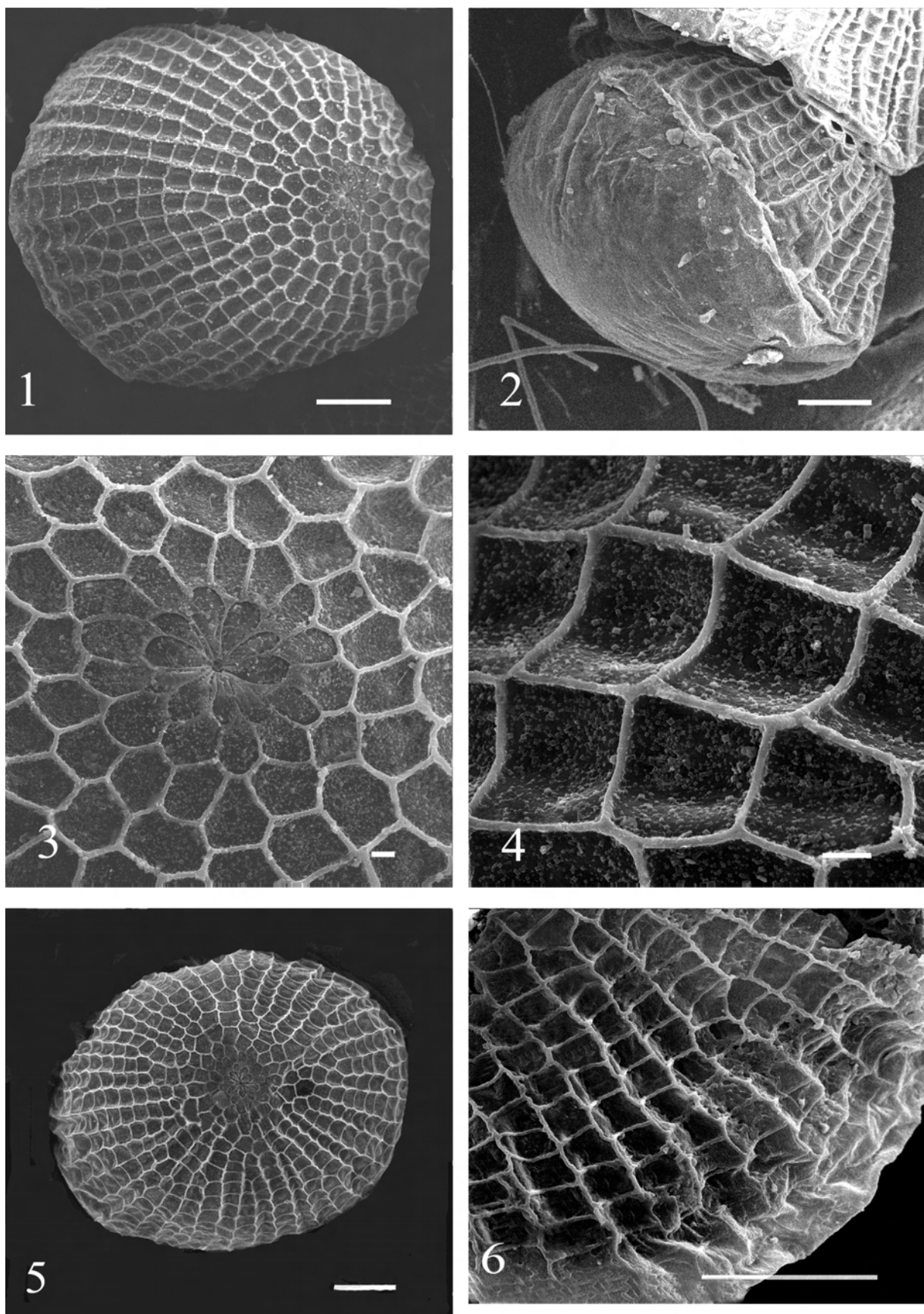
Oviposition. Eggs laid solitary.

***Polia nebulosa* (Hufnagel, 1766)**

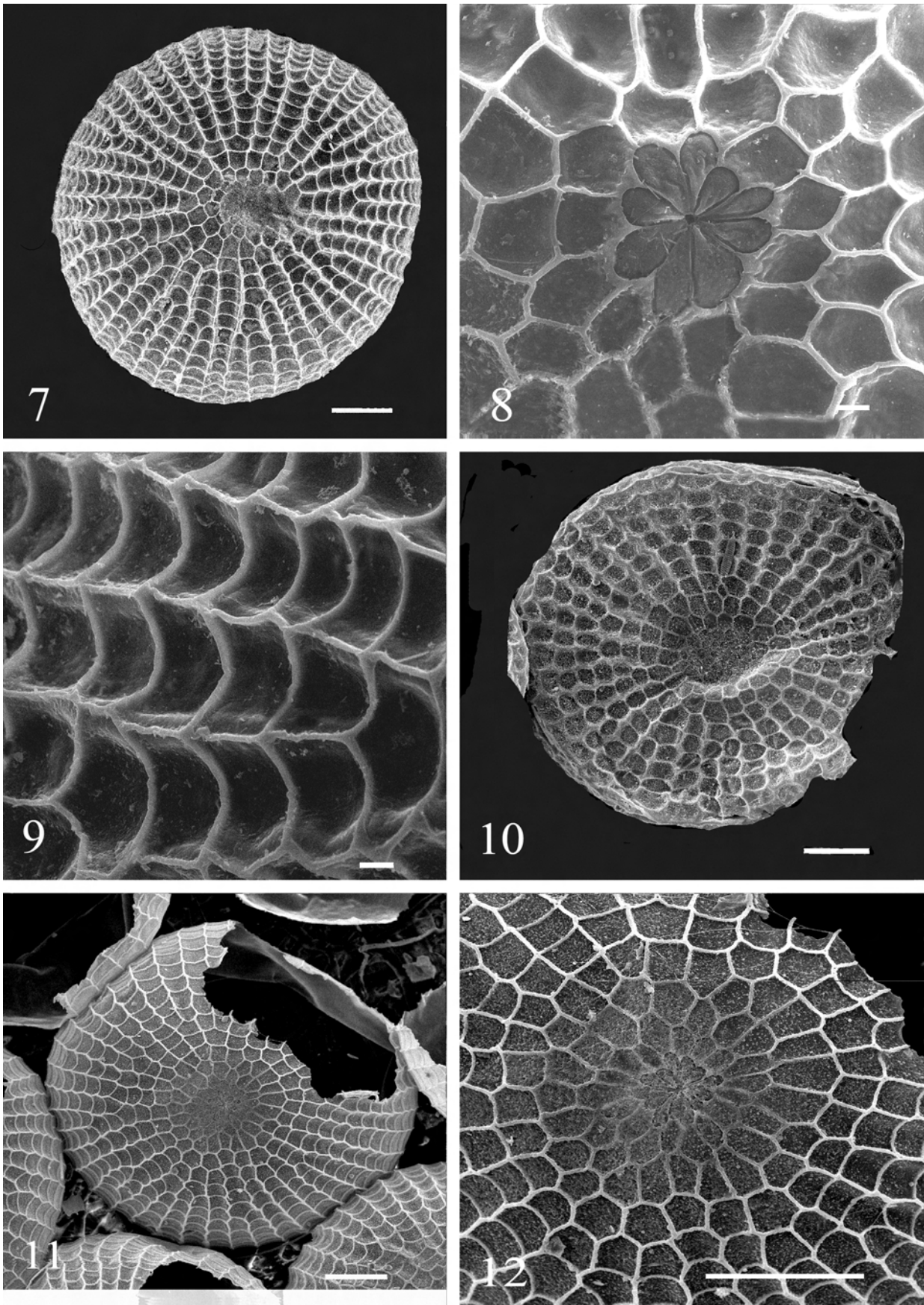
Material. Ukraine, Volynska Region, Lyubishevskiy District, vic. Svalovichi. 18.06.2005; Crimea, Karadag Nature Reserve. 21.06.2006 (I. Dolinskaya).

Characteristics. Egg subspherical (Fig. 23), height 0.65–0.7 mm, diameter 0.75–0.8 mm (n = 10). Fresh egg light green to white. As egg develops, it becomes light green to grey with grey spot at apical part of egg. Before caterpillar emergence egg becoming grey with black spot at apical part of egg (caterpillar). Chorion white, translucent.

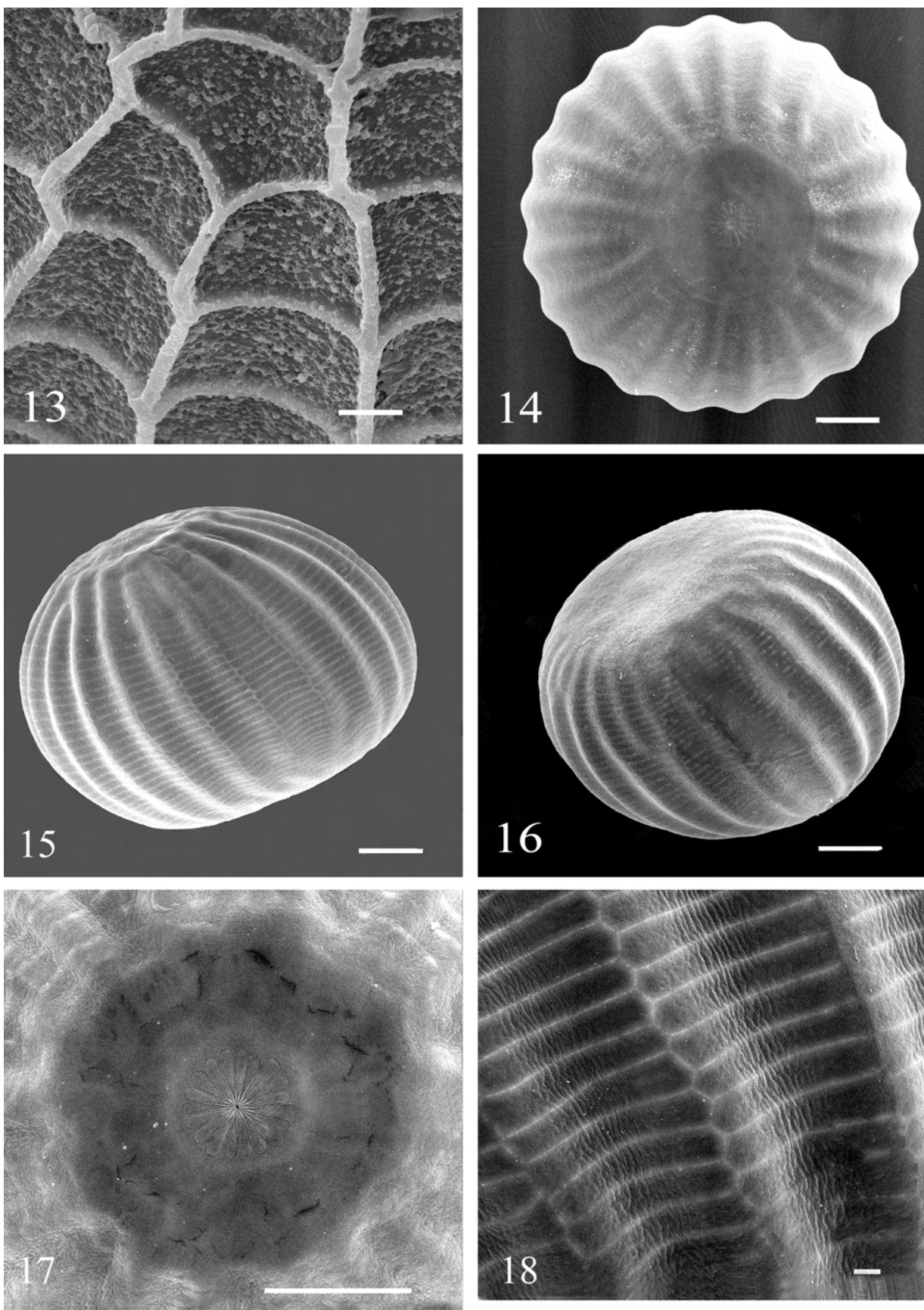
Chorion ridged. It is marked on two thirds surfaces. Micropylar rosette with 10–11 petalled cells and with 7 micropylar openings. Secondary cells polygonal. There are 11–13 of the 28–30 elevated longitudinal ridges radiate from outer ends of secondary cells. Transverse walls broad as ridges, but much less distinct than ridges. Aeropyles slightly expressed. Cells have smooth floors (Fig. 24).



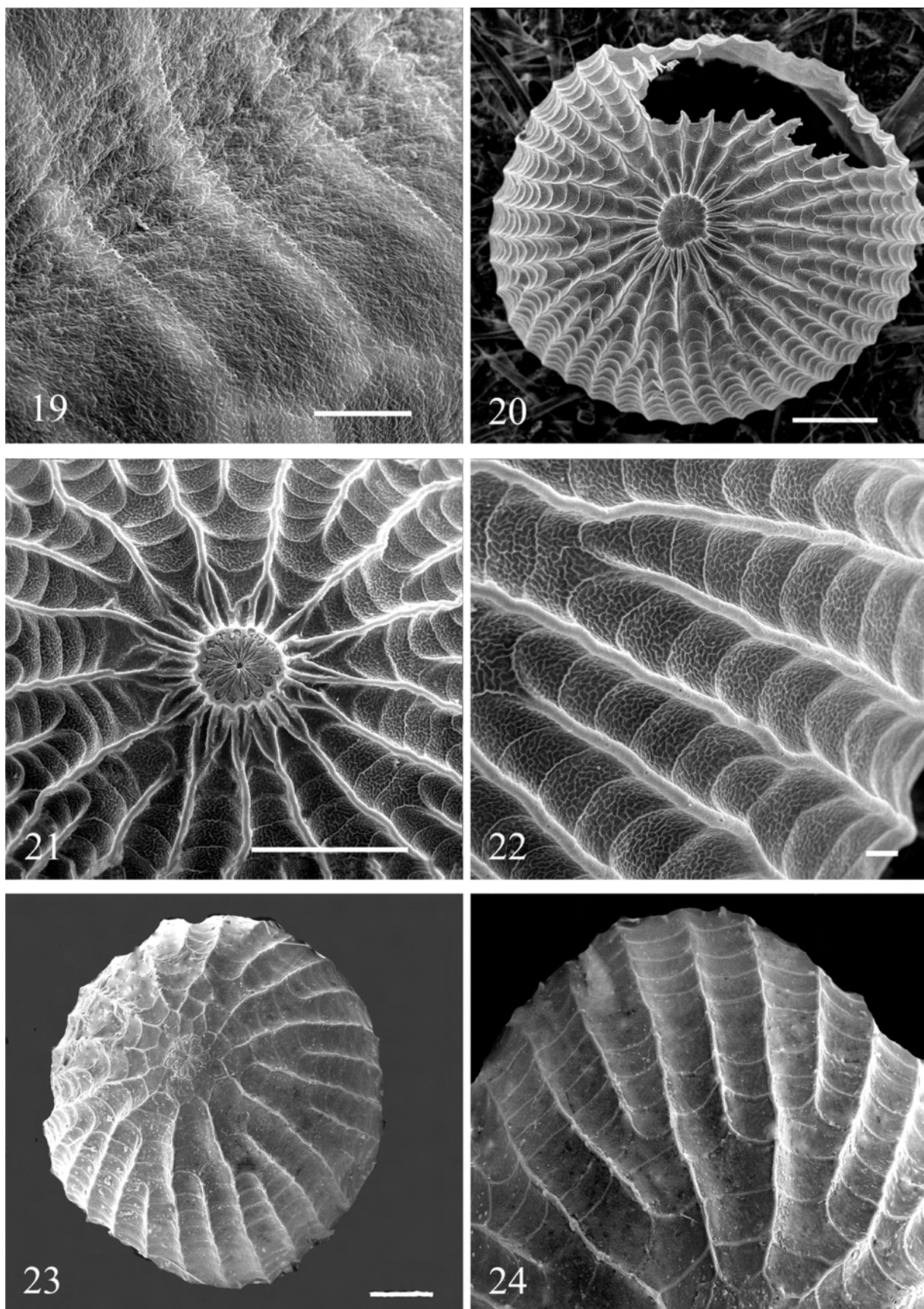
Figs. 1–6. Eggs of Hadeninae: 1–4. *Orthosia cerasi*. 5. *Orthosia cruda*. 6. *Orthosia populeti*.
Scale: 100 μ (1, 2, 5, 6); 10 μ (3, 4).



Figs. 7–12. Eggs of Hadeninae: 7–9. *Orthosia gothica*; 10. *Orthosia incerta*; 11–12. *Egira conspicillaris*.
Scale: 100 μ m (7, 10–12); 10 μ m (8, 9).



Figs. 13–18. Eggs of Hadeninae: 13. *Egira conspicillaris*; 14–18. *Tholera decimalis*.
Scale: 100 μm (13–17); 10 μm (18).



Figs. 19–24. Eggs of Hadeninae: 19. *Tholera decimalis*; 20–22. *Anarta trifolii*; 23–24. *Polia nebulosa*.
Scale: 10 μ (19, 22); 100 μ (20, 21, 23–24).

Oviposition. Eggs laid in single-layer tight clusters where they pressed one to another.

***Lacanobia thalassina* (Hufnagel, 1766)**

Material. Ukraine, Cherkaska Region, Kaniv Nature Reserve. 18.08.2005 (I. Dolinskaya).

Characteristics. Egg subspherica, height 0.5–0.6 mm, diameter 0.6–0.7 mm ($n = 5$). Fresh egg pale yellow. Before caterpillar emergence egg becoming purple.

Chorion not ridged. It is marked on anterior half of egg by cells (longitudinal ridges indistinct expressed) and smoothed on the remaining surface (Fig. 25). Micropylar rosette with 16–18 long and narrow petalled cells and with 5–7 micropylar openings. Secondary cells long, polygonal (Fig. 26). Cell remaining egg surface short and broad. Aeropyles slightly expressed. Cells have smooth floors (Fig. 27).

Oviposition. Eggs laid in single-layer tight clusters where they pressed one to another.

***Lacanobia w-latinum* (Hufnagel, 1766)**

Material. Ukraine, Dnipropetrovska Region. 2.07.2002 (Yu. Geryak).

Characteristics. Egg subspherical, height 0.55 mm, diameter 0.7 mm ($n = 5$). Chorion sculpture as like as previous species (Fig. 28) but the cells of micropylar rosette with folded floors (Fig. 29).

Oviposition. Eggs laid in single-layer tight clusters where they pressed one to another.

***Hada plebeja* (Linnaeus, 1761)**

Material. Ukraine, Volynska Region, Lyubishevskiy District, vic. Svalovichi. 16.06.2005 (I. Dolinskaya).

Characteristics. Egg subspherical (Fig. 30), height 0.4–0.5 mm, diameter 0.5–0.8 mm ($n = 5$). Fresh egg pale yellow. As egg develops, it becomes pale brown and then brown. Хорион полупрозрачный.

Chorion ridged. It is marked on two thirds surfaces (Fig. 31). Micropylar rosette conspicuous, elevated with 16–19 long and narrow petalled cells, which have folded floors. Secondary cells slightly expressed, long and narrow (Fig. 32). There are 12 of the 41–44 longitudinal ridges radiate from outer ends of secondary cells. Transverse walls unmarked on anterior quarter of egg and slightly expressed on remaining egg surface. Longitudinal ridges elevated, broad, conspicuous. Aeropyles slightly expressed (Fig. 33).

***Mamestra brassicae* (Linnaeus, 1758)**

Material. Ukraine, Cherkaska Region, Kaniv Nature Reserve. 13.08.2005 (I. Dolinskaya).

Characteristics. Egg subspherical (Fig. 34), height 0.5 mm, diameter 0.5–0.9 mm ($n = 5$). Fresh egg pale yellow. As egg develops, it becomes brown-yellow. Before caterpillar emergence egg becoming taupe or black. Chorion white, translucent.

Chorion ridged. It is marked on two thirds surfaces. Micropylar rosette conspicuous, elevated with 11–15 petalled cells and with 5 micropylar openings. The cells floors folded. Secondary cells slightly expressed, long and narrow. There are 13–15 of the 34–37 longitudinal ridges radiate from outer ends of secondary cells. Longitudinal ridges elevated, broad, slightly wavy. Transverse walls filiform, clearly expressed, especially in area of 2–8 series of cells, much less distinct that ridges (Fig. 35). Aeropyles slightly expressed. Chorion wrinkled everywhere (Fig. 36).

Oviposition. Eggs laid in single-layer tight clusters where they pressed one to another.

***Sideridis turbida* (Esper, 1790)**

Material. Ukraine, Volynska Region, Lyubishevskiy District, vic. Svalovichi. 15.06.2005 (I. Dolinskaya).

Characteristics. Egg subspherical (Fig. 37), height 0.4 mm, diameter 0.6–0.7 mm ($n = 5$). Fresh egg pale yellow. As egg develops, it becomes pale brown with pale pink tint. Before caterpillar emergence egg becoming brown (caterpillar). Chorion white, translucent.

Chorion ridged. It is marked on two thirds surfaces. Micropylar rosette elevated, conspicuous, with 13–16 long and narrow petalled cells and with 4–5 micropylar openings. Base of cells convex in the middle and concave near walls (Fig. 38). Secondary cells indistinct, long and narrow. There are 11–13 of the 32–35 broad longitudinal ridges radiate from outer ends of secondary cells. Transverse walls filiform, much less distinct that ridges (Fig. 39). Aeropyles clearly expressed. Chorion wrinkled everywhere (Fig. 40).

Oviposition. Eggs laid as one-layered line bands (10–15 eggs), where they tightly pressed one to other.

***Conisania luteago* ([Denis & Schiffermüller], 1775)**

Material. Ukraine, Crimea, Karadag Nature Reserve. 15.07.2006 (I. Dolinskaya).

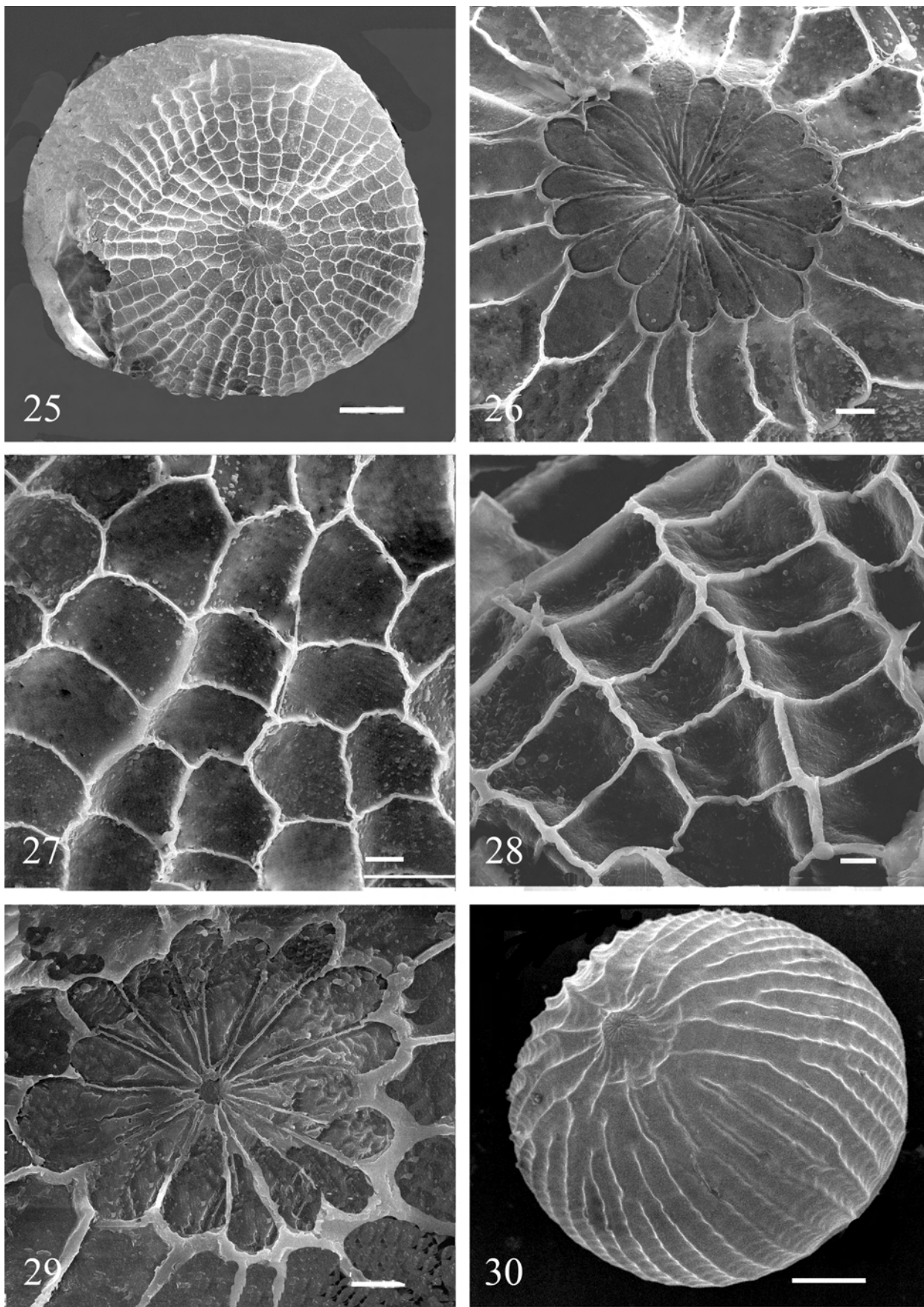
Characteristics. Egg subspherical (Fig. 41), height 0.7–0.8 mm, diameter 0.9–1.0 mm ($n = 2$). Fresh egg white, then it becomes pale citron colour. Before caterpillar emergence egg becoming grey with purple-grey spot at apical part of egg. Chorion translucent, white with pale brown micropylar area.

Chorion ridged-cellular. Apical third of egg cellular and remaining ridged. Micropylar rosette with 13–14 petalled. Cells apical third of eggs arranged irregularly on chorion, various under the form and size (Fig. 42). Remaining egg surface looks like narrow and long columnar cells with conspicuous longitudinal ridges. Aeropyles slightly expressed (Fig. 43).

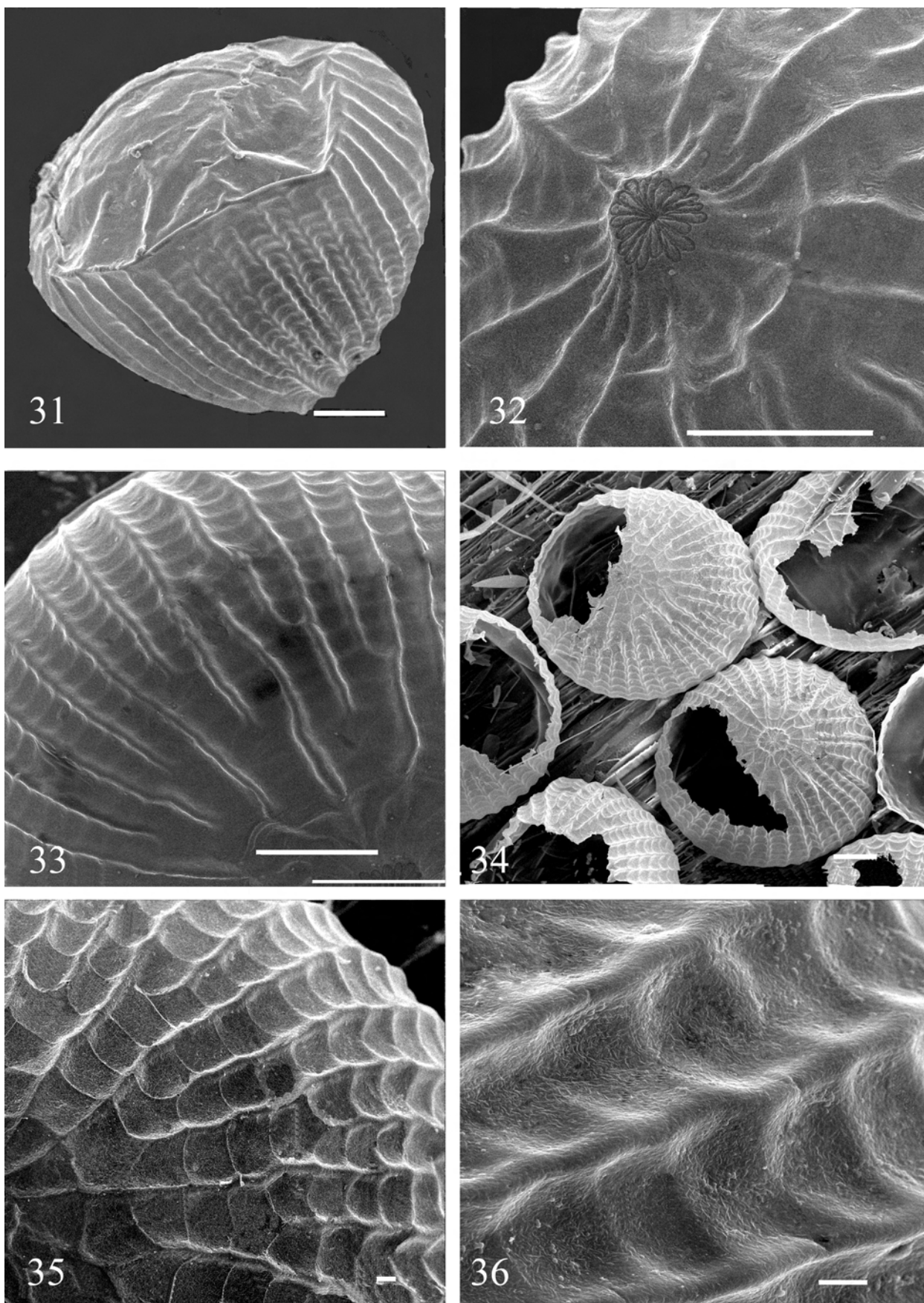
Oviposition. Eggs laid solitary.

***Mythimna albipuncta* ([Denis & Schiffermüller], 1775)**

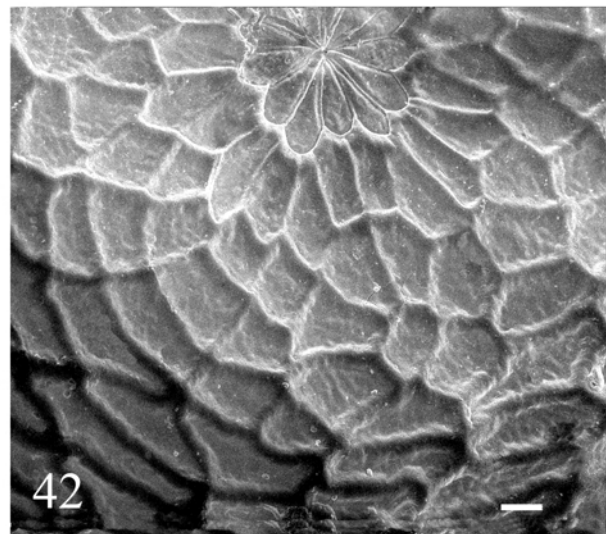
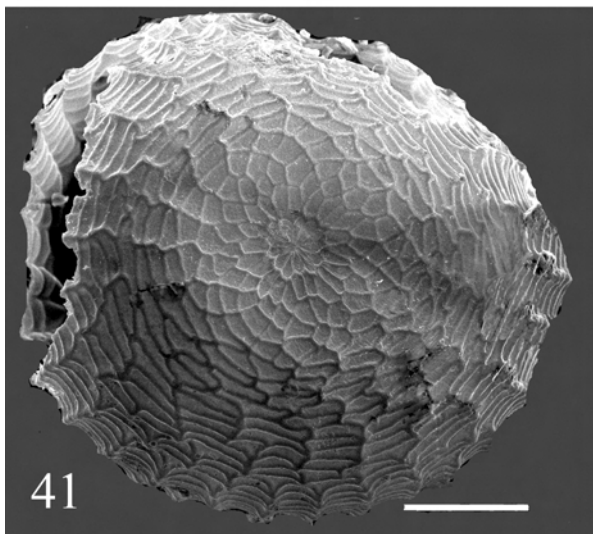
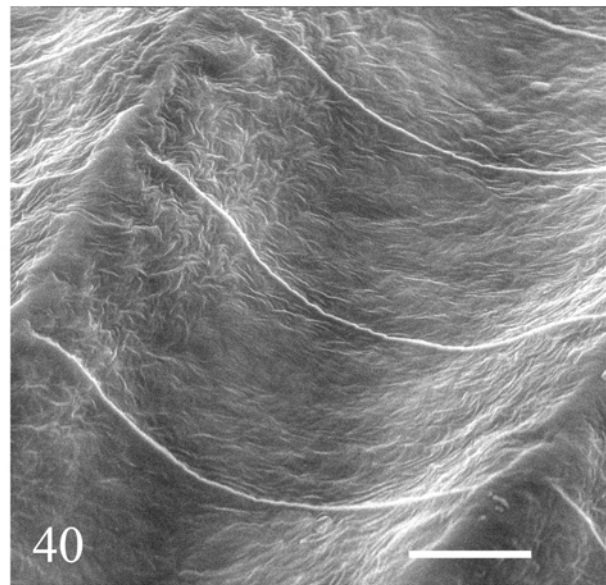
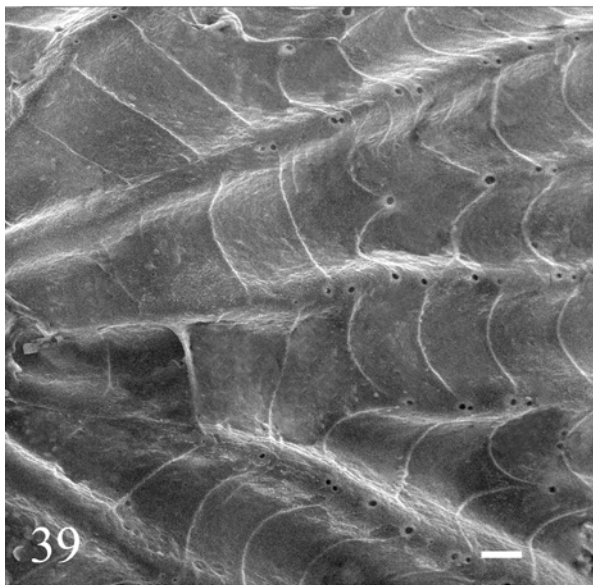
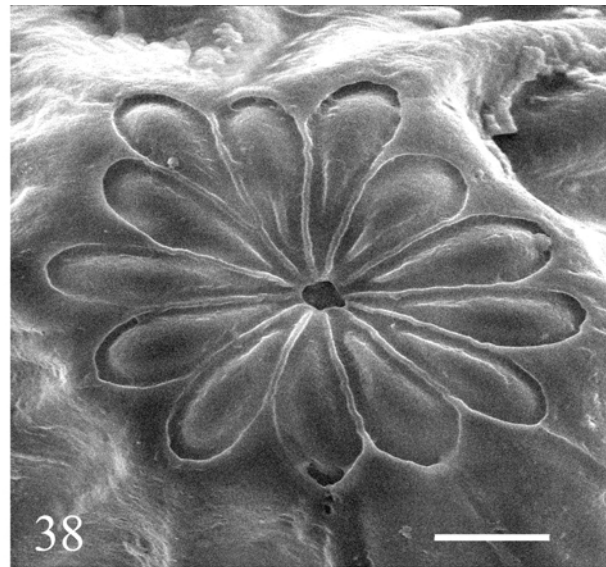
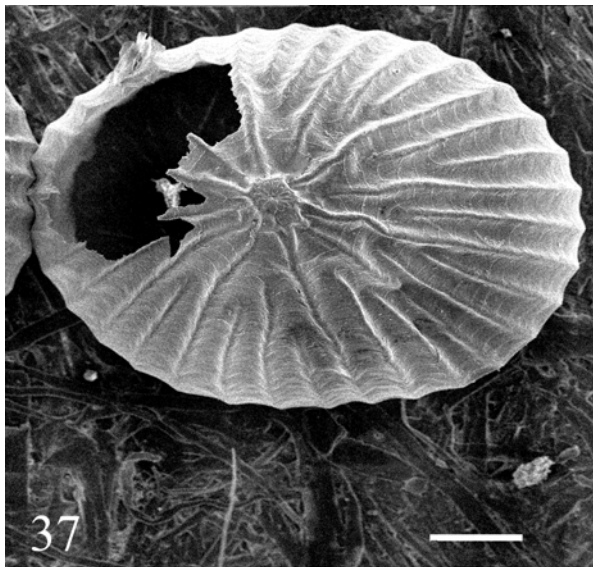
Material. Ukraine, Cherkaska Region, Kaniv Nature Reserve. 19.08.2005 (I. Dolinskaya).



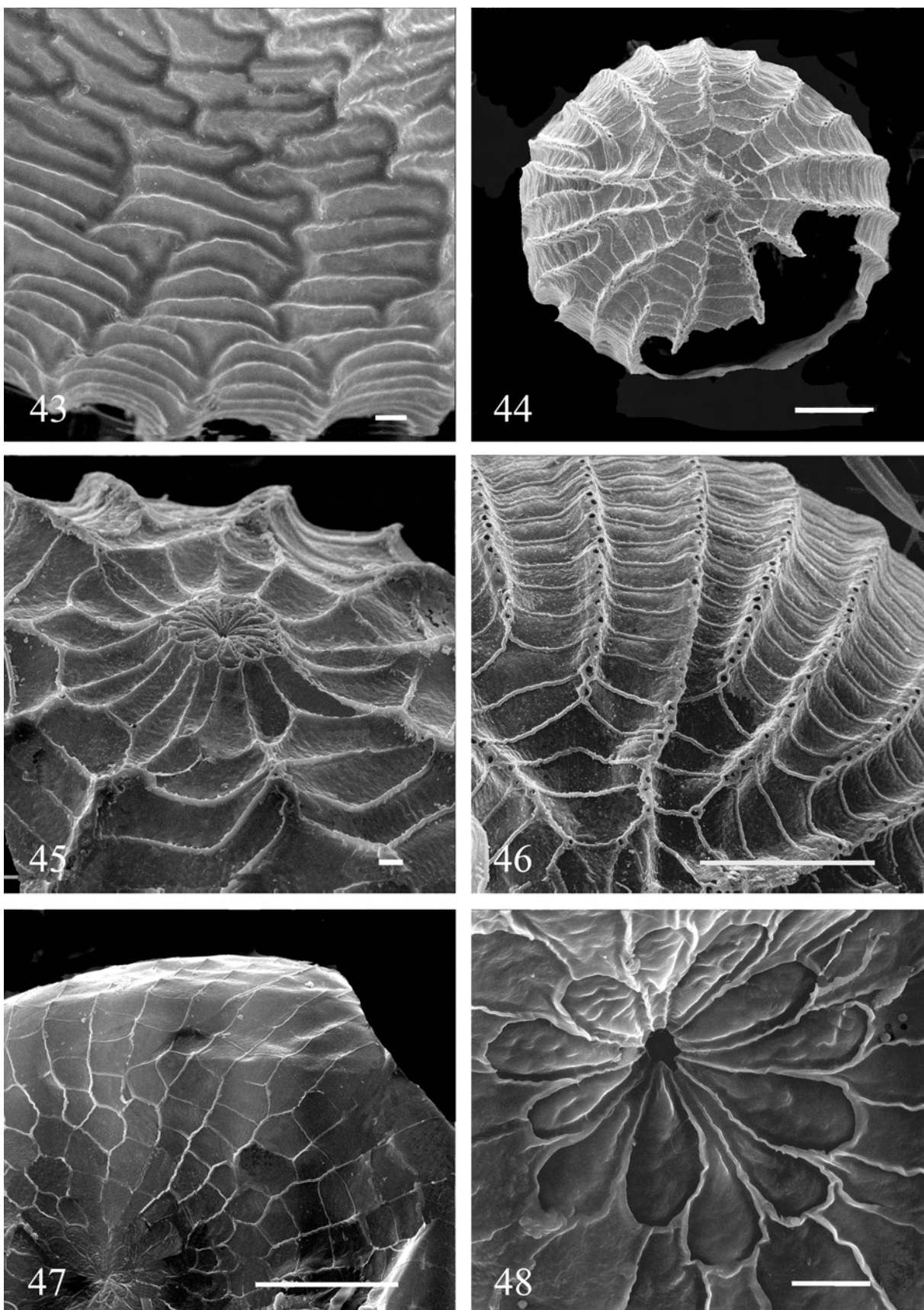
Figs. 25–30. Eggs of Hadeninae: 25–27. *Lacanobia thalassina*; 28–29. *Lacanobia w-latinum*; 30. *Hada plebeja*.
Scale: 100 μ (25, 30); 10 μ (26–29).



Figs. 31–36. Eggs of Hadeninae: 31–33. *Hada plebeja*; 34–36. *Mamestra brassicae*.
Scale: 100 μ (32–34); 10 μ (31, 35–36).



Figs. 37–42. Eggs of Hadeninae: 37–40. *Sideridis turbida*; 41–42. *Conisania luteago*.
Scale: 100 μ (37, 41); 10 μ (38–40, 42).



Figs. 43–48. Eggs of Hadeninae: 43. *Conisania luteago*; 44–46. *Mythimna albipuncta*; 47–48. *Leucania obsoleta*.
Scale: 100 μ (43, 44, 46, 47); 10 μ (45, 48).

Characteristics. Egg subspherical (Fig. 44), diameter 0.6–0.7 mm ($n = 5$). Fresh egg yellow–white.

Chorion ridged. It is marked on two thirds surfaces. Micropylar rosette elevated, with 13–14 petalled cells. Base of cells convex in the middle and concave near walls. Secondary cells typical, long, narrow and pointed (Fig. 45). There are 10–11 of the 24 elevated longitudinal ridges radiate from pointed ends of secondary cells. Along all surface of longitudinal ridges densely placed aeropyles with large roller-like edges (Fig. 46). Transverse walls narrow, much less distinct than ridges. Columnar cells broad and short.

Oviposition. Eggs laid in single-layer tight clusters where they pressed one to another.

Remark. Secondary cells similar to *Anarta trifolii*.

Leucania obsoleta (Hübner, 1803)

Material. Ukraine, Crimea, Karadag Nature Reserve. 15.06.2006 (I. Dolinskaya).

Characteristics. Egg semi-oval, diameter 0.7 mm ($n = 5$). Fresh egg pale yellow. In three days after laying egg becomes citron colour. Before caterpillar emergence egg becoming grey. Chorion white, transparent.

Chorion not ridged. It is marked on anterior quarter of egg by cells and smoothed on the remaining surface (Figs. 47, 48). Micropylar rosette with 10–12 long and narrow petalled cells. Base of cells convex in the middle and concave near walls (рис. 49). Cells of 5–7 series short and broad with folded floors and narrow walls. Cells arranged by regular radial lines. Aeropyles slightly expressed.

Oviposition. Eggs are laid by clusters, are disposed chaotically one on the other.

Discussion

Based on the data above, the three types of sculpture, cellular, ridged-cellular and ridged, are typical for studied species of the subfamily Hadeninae.

Cellular sculpture is typical for species from four studied genera, *Orthosia cerasi*, *O. cruda*, *O. populeti*, *O. gothica*, *O. incerta*, *Egira conspiciellaris*, *Lacanobia thalassina*, *L. w-latinum* and *Leucania obsoleta*.

Cellular sculpture marked either on two thirds surface (*Egira conspiciellaris*, species from genus *Orthosia*), or on anterior quarter — anterior half of egg surface. *Leucania obsoleta*, species from genus *Lacanobia*.

There are no differences between *Egira conspiciellaris* and species genus *Orthosia*.

Leucania obsoleta sculpture in form 7–8 series of cells. Micropylar rosette with 10–12 cells.

Lacanobia thalassina and *L. w-latinum* in form 12–14 series of cells. Micropylar rosette with 16–18 cells.

Ridged-cellular sculpture is typical for species *Conisania luteago*. Apical third of egg cellular and remaining ridged.

Ridged sculpture is typical for species from seven studied genera — *Tholera decimalis*, *Anarta trifolii*,

Polia nebulosa, *Hada plebeja*, *Mamestra brassicae*, *Sideridis turbida* and *Mythimna albipuncta*.

Hada plebeja. Transverse walls unmarked on anterior quarter of egg and slightly expressed on remaining egg surface.

Mamestra brassicae. Transverse walls filiform and clearly expressed in area of 2–8 series of cells. On remaining egg surface they more broad and diffuse.

Sideridis turbida. Transverse walls filiform, conspicuous.

Tholera decimalis. Sculpture weakly expressed. Columnar cells are typical — broad and short. Along all surface of longitudinal ridges and transverse walls densely placed small aeropyles

Anarta trifolii and *Mythimna albipuncta*. Secondary cells are typical, long, narrow and pointed. However every species have typical diagnostic characters.

Anarta trifolii. There are 14–18 of the 39–43 longitudinal ridges radiate from secondary cells. Chorion sharply wrinkled everywhere.

Mythimna albipuncta. There are 10–11 of the 24 longitudinal ridges radiate from secondary cells. Along all surface of longitudinal ridges densely placed aeropyles with large roller-like edges.

Polia nebulosa. Transverse walls broad as ridges, but much less distinct than ridges.

Acknowledgements

I am obliged to Yu. Geryak (State Natural History Museum, Lviv, Ukraine) for presented dry females of Noctuidae. I am grateful to A. Matov (Zoological Institute of the Russian Academy of Sciences, St. Petersburg), Yu. Budashkin (Karadag Nature Reserve, Crimea, Ukraine) and Yu. Geryak for their assistance in definition of Noctuidae. I express my gratitude to M. Ponomarenko, E. Belayev (Institute of Biology and Soil Science, Vladivostok, Russia), S. Sinev, A. L'vovskiy, A. Matov (Zoological Institute, St. Petersburg, Russia) and S. Passoa (The Ohio State University, United States) for providing me with literature. I wish to express my thanks to Yu. Budashkin for his assistance during our field work in Ukraine and granting us his stationary facilities.

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Нові знахідки комарів-дзвінців (Diptera, Chironomidae) з Харківської області

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Baranov V. A. New Records of the Non-Biting Midges (Diptera, Chironomidae) from Kharkivska Region. Summary. Two species of chironomid midges, *Diamesa tonsa* (Walker, 1856) and *Micropsectra attenuata* Reiss, 1969, are recorded for the first time from Ukraine based on adult specimens reared from pupae and larvae.

Keywords: Diptera, Chironomidae, non-biting midges, larvae, pupae, imago, first record, Ukraine, Kharkiv.

Баранов В. О. Нові знахідки комарів-дзвінців (Diptera, Chironomidae) з Харківської області. Резюме. Вперше у фауні України відмічені два види комарів-дзвінців: *Diamesa tonsa* (Walker, 1856) і *Micropsectra attenuata* Reiss, 1969. Імаго були отримані шляхом виведення з лялечок і личинок.

Ключові слова: Diptera, Chironomidae, комари-дзвінці, личинки, лялечки, імаго, перша знахідка, Україна, Харків.

Баранов В. А. Новые находки комаров-звонцов (Diptera, Chironomidae) из Харьковской области. Резюме. Впервые в фауне Украины отмечены два вида комаров-звонцов: *Diamesa tonsa* (Walker, 1856) и *Micropsectra attenuata* Reiss, 1969. Имаго были получены путем выведения из куколок и личинок.

Ключевые слова: Diptera, Chironomidae, комары-звонцы, личинки, куколки, имаго, первая находка, Украина, Харьков.

Вступ

Комарі-дзвінці (Diptera, Chironomidae) в Україні є вивченими переважно на преімагінальних стадіях як важливий компонент харчової бази промислових риб (Фадєєв, 1929; Поліщук, 1964, 1974; Поліщук та Гарасевич, 1986; Афанасьєв, 2001), проте імаго досі лишуються вивченими недостатньо, через що відомості про видове різноманіття хірономід є значно заниженими (Панкратова, 1970). Преімагінальні стадії комарів-дзвінців часто не мають ознак для точної ідентифікації і можуть бути визначені у багатьох випадках тільки до груп видів (Панкратова, 1983). Так, база даних Fauna Europaea (Sæther, 2010) наводить для України 95 видів, а В. Д. Романенко (2004) — 120 видів, у той час як очікувана кількість для України, на думку В. Я. Панкратової (1983) коливається в межах 300–400 видів.

Завдяки виведенню імаго з лялечок та личинок 4-го віку автору вдалося знайти два види, раніше невідомі з України. Матеріал зберігається в Українському науково-дослідному інституті екологічних проблем (УкрНДІЕП), м. Харків.

Назви комарів-дзвінців наведено за Каталогом палеарктичних двокрилих (Ashe & Cranston, 1990)

Diamesa tonsa (Walker, 1856)

Харків: Саржин яр, 50°01'36"N 36°13'51"E, 28.09.2010, 1 ♀; 2 лялечки, 7 личинок (Баранов).

Поширення: Російська Федерація (Кольський півострів, Ленінградська обл.), ФРГ, Австрія, Болгарія, Німеччина, Чехія, Франція, Велика Британія, Греція, Італія, Ірландія, Норвегія, Польща, Румунія, Швеція. (Панкратова, 1970; Ashe & Cranston, 1990).

Примітка: літореофіли, у холодних струмках (Панкратова, 1970).

Micropsectra attenuata Reiss, 1969.

Харків: Саржин яр, 50°01'36"N 36°13'51"E, 28.09.2010, 1 ♂; 1 ♀, 1 лялечка, 1 личинка (Баранов).

Поширення: Німеччина, Франція, Данія, Велика Британія. (Панкратова, 1983, Ashe & Cranston, 1990).

Примітка: у текучих водах, на водній рослинності (Панкратова, 1970).

Подяки

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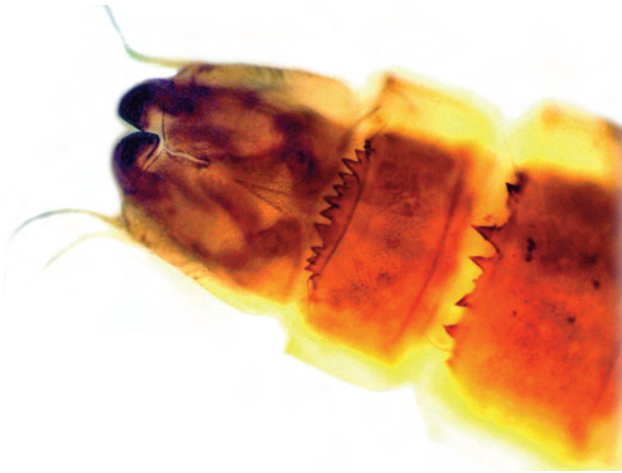


Рис. 1. *Diamesa tonsa* (Walker, 1856), лялечка: анальні лопаті та тергіти 7–8.



Рис. 2. *Micropsectra attenuata* Reiss, 1969, самець: вальви та придатки гонококсита.

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First Records of Dolichopodidae (Diptera) from Kaluga Region of Russia

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Grichanov I. Ya. First Records of Dolichopodidae (Diptera) from Kaluga Region of Russia. Summary. The faunistic data of the results of collecting dolichopodids (7 species) in the Kaluga Region of Russia during short-term visit (June, 2010) are presented. All species are firstly recorded for the region.

Key words: Diptera, Dolichopodidae, fauna, Russia, Kaluga.

Гричанов И. Я. Первые данные о Dolichopodidae (Diptera) Калужской области, Россия. Резюме. Представлены результаты сборов долихоподид (7 видов) в Калужской области России во время экскурсии автора в июне 2010 г. Все виды впервые отмечаются для области.

Ключевые слова: Diptera, Dolichopodidae, фауна, Россия, Калужская область.

Гричанов І. Я. Перші відомості про Dolichopodidae (Diptera) Калужської області, Росія. Резюме. Наведено результати зборів доліхоподид (7 видів) в Калужській області Росії у червні 2010 г. Всі види вперше відмічено для області.

Ключові слова: Diptera, Dolichopodidae, фауна, Росія, Калузька область.

Introduction

When studying recent Diptera catalogs, I have found that the fauna of the long-legged flies (Dolichopodidae) of Kaluga Region of Russia remained unstudied (Гричанов и Негроров, 1979; Negrobov, 1991; Grichanov, 2003–2010). This paper presents the new records in detail. All species are widespread across the Palearctic Region and common in the neighboring Moscow Region that may be considered to be comparatively well-studied.

Material and Methods

A hand net was used for collecting. After a short collection trip made by me to the Kaluga Region (Iznoski District, Gamzyuki, June 29, 2010), 7 species were found in this locality. Mainly wet localities (except tree trunks *Medetera* was taken from) were explored. The collector of all specimens is the author of the paper; his name and the label data are omitted. Specimens examined in this study are deposited in the author's collection. The species are illustrated with ZEISS Discovery V-12 stereomicroscope and Axio-Cam MRc5 camera. General Distribution of species is given after Negrobov (1991) and Grichanov (2003–2010).

New records

Chrysotus cilipes Meigen, 1824 (Fig. 1)

Material examined. 1 ♀.

Distribution. Abkhazia, Afghanistan, Armenia, Austria, Azerbaijan, Belgium, Bulgaria, China, Czech, Estonia, Den-



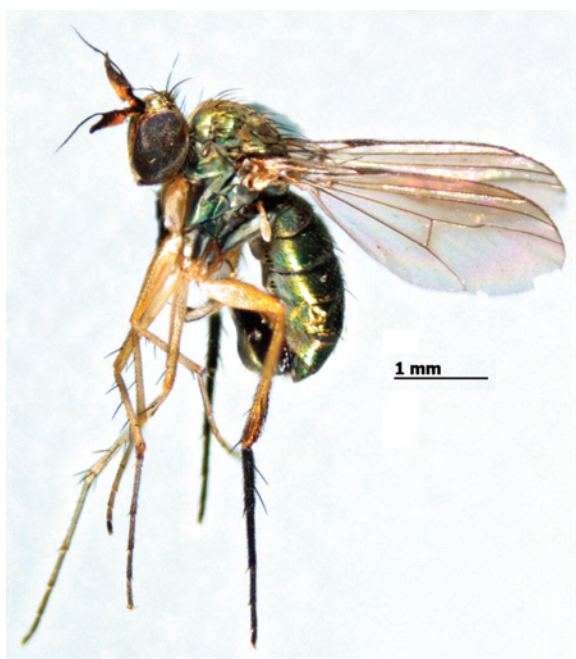
Fig. 1. *Chrysotus cilipes* Meigen, male

mark, Finland, France, Germany, Hungary, Ireland, Italy, Japan, Kazakhstan, Korea, Lithuania, Luxembourg, Madeira, Mongolia, Netherlands, Norway, Poland, Romania, N Russia: Leningrad, Novgorod, Pskov; C Russia: Moscow, Voronezh; S Russia: Adygea, Kabardino-Balkaria, Krasnodar, Rostov; E Russia: Tomsk, Altai, Krasnoyarsk, Baikal, Transbaikalia, Yakutia, Amur Reg., Primorskii Terr.; Slovakia, ?Slovenia, Spain, Sweden, Switzerland, Turkey, UK, Ukraine, "Yugoslavia". Type locality: Germany: Hamburg.

***Dolichopus longicornis* Stannius, 1831 (Fig. 2)**

Material examined. 2♀.

Distribution. Austria, Belarus, Belgium, China, Czech, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Kazakhstan, Latvia, Lithuania, Luxembourg, Mongolia, Netherlands, Norway, Poland, Romania, Murmansk (Pechenga), Arkhangel'sk, Karelia, Komi, Leningrad, Vologda, Pskov, Novgorod; C Russia: Yaroslavl, Moscow, Perm, Lipetsk, Voronezh; S Russia: Krasnodar; E Russia: Irkutsk, Krasnoyarsk, Ural, Altai, Sayany, Amur Reg., Kamchatka, Magadan, Primorskii Terr., Sakhalin, Yakutia; Slovakia, Sweden, Switzerland, UK, Ukraine: Kherson, Carpathia; Nearctic: Canada: Yukon, USA: Alaska. Type locality: not given.

Fig. 2. *Dolichopus longicornis* Stannius, male.***Dolichopus simplex* Meigen, 1824 (Fig. 3)**

Material examined. 1 ♂, 1 ♀.

Distribution. Austria, Belarus, Belgium, Czech, Denmark, Finland, France, Germany, Georgia, Hungary, Ireland, N Kazakhstan, Latvia, Lithuania, Netherlands, Norway, Poland, ?Romania, N Russia: Karelia, Murmansk, Leningrad, Vologda, Pskov, Novgorod; C Russia: Kirov, Nizhnii Novgorod, Moscow, Lipetsk, Voronezh; S Russia: Karachai-Cherkessia, Krasnodar, Rostov; E Russia: Orenburg, Yakutia; Slovakia, Sweden, Switzerland, UK, Ukraine: Cherkasy, Odessa. Type locality: Germany: Hamburg, Kiel.

Fig. 3. *Dolichopus simplex* Meigen, male.***Medetera jacula* (Fallén, 1823) (Fig. 4)**

Material examined. 1 ♂, 1 ♀.

Distribution. Armenia; Azerbaijan; Belarus, Belgium, Czech, Denmark, Estonia, Finland, France, Georgia; Germany, Hungary, Ireland, Italy, N Kazakhstan, Latvia, Lithuania, Netherlands, Norway, Poland, Romania; Russia: Adygea, Alania, Kabardino-Balkaria, Karelia, Krasnodar, Leningrad, Lipetsk, Moscow, Velikii Novgorod, Orenburg, Penza, Perm, Pskov, Rostov, Samara, Stavropol, Volgograd, Vologda, Voronezh, Altai, Baikal, Buryatia, Urals; Slovakia, Sweden, Switzerland, Tunisia; Turkey; UK, Ukraine: Crimea, Kharkiv, Kherson, Luhansk, Odessa, Poltava. Type locality: Sweden: Scania.

Fig. 4. *Medetera jacula* (Fallén), male.

***Campsicnemus curvipes* (Fallén, 1823) (Fig. 5)**

Material examined. 2 ♂, 1 ♀.

Distribution. Abkhazia, Algeria, Armenia, Austria, Azerbaijan, Azores, Belarus, Belgium, Bulgaria, Canary Is., Czech, Denmark, Estonia, Finland, France, Germany, Greece incl. Crete; Hungary, Ireland, Italy, Latvia, Luxembourg, ?Macedonia, Madeira, Morocco, Netherlands, Norway, Poland, Romania, Russia: Adygea, Alania, Dagestan, Kabardino-Balkaria, Karelia, Karachai-Cherkessia, Stavropol', Krasnodar, Leningrad, Lipetsk, Moscow, Pskov, Ryazan, Vologda, Voronezh; Slovakia, ?Slovenia, Spain, Sweden, Switzerland, Turkey, UK, Ukraine: Crimea, Odessa; "Yugoslavia". Type locality: not given.

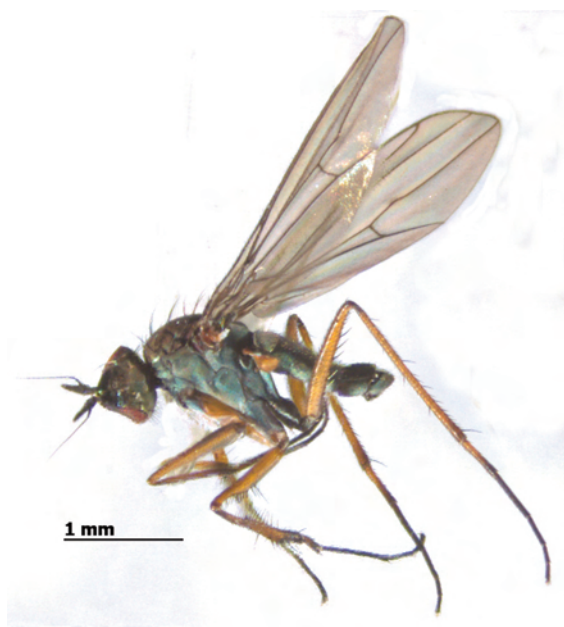


Fig. 5. *Campsicnemus curvipes* (Fallén), male.

***Syntormon pumilus* (Meigen, 1824) (Fig. 6)**

Material examined. 1 ♂.

Distribution. Afghanistan, Armenia; Austria, Belarus, Belgium, Bulgaria, Czech, Denmark, ?Egypt, Estonia, Finland, France, Germany, ?Greece, Hungary, Ireland, ?Israel, Italy, Latvia, Morocco, Norway, Poland, Romania; Russia: Kabardino-Balkaria, Karelia, Krasnodar, Leningrad, Lipetsk, Moscow, Murmansk, Pskov, Stavropol', Urals, Vologda, Voronezh; Slovakia, ?Slovenia, Sweden, Spain (Canary Is.), Tunisia, UK, Ukraine: Kherson, Odessa; "Yugoslavia"; Middle Asia [Some records may belong to *Syntormon denticulatus* (Zetterstedt, 1843) and should be confirmed]. Type locality: not given.

***Teuchophorus spinigerellus* (Zetterstedt, 1843) (Fig. 7)**

Material examined. 1 ♂, 2 ♀.

Distribution. Abkhazia, Austria, Azerbaijan, Belgium, Bulgaria, Czech, Denmark, Egypt, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, S Kazakhstan,



Fig. 6. *Syntormon pumilus* (Meigen), male.



Fig. 7. *Teuchophorus spinigerellus* (Zetterstedt), male.

Latvia, Netherlands, Norway, Poland, Romania, Russia: Adygea, Kabardino-Balkaria, Krasnodar, Leningrad, Pskov, Stavropol', Vologda; Spain, Sweden, Switzerland, UK. Type locality: Suecia meridionali & media, Scania ad Lund, Ostrogothia ad Wadstena, Dania [Sweden, Denmark].

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First Data on Dolichopodidae (Diptera) of Khanty-Mansi Autonomous Region of Russia

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Grichanov I. Ya. First data on Dolichopodidae (Diptera) of Khanty-Mansi Autonomous Region of Russia. Summary. The faunistic data of the results of collecting dolichopodids (32 species) in the Khantia-Mansia in July-August, 2010 are presented. All species are recorded from the Region for the first time.

Key words: Diptera, Dolichopodidae, fauna, Russia, Khantia-Mansia.

Гричанов И. Я. Первые данные о Dolichopodidae (Diptera) Ханты-Мансийского автономного округа, Россия. Резюме. Представлены результаты сборов долихоподид (32 вида) в Ханты-Мансийском автономном округе России в июле-августе 2010 г. Все виды впервые отмечаются для округа.

Ключевые слова: Diptera, Dolichopodidae, фауна, Россия, Ханты-Мансийский автономный округ.

Гричанов І. Я. Перші відомості про Dolichopodidae (Diptera) Ханті-Мансійського автономного округу, Росія. Резюме. Наведено результати зборів доліхоподид (32 вида) в Ханті-Мансійському автономному окрузі Росії у липні-серпні 2010 р. Всі види вперше відмічено для округу.

Ключові слова: Diptera, Dolichopodidae, фауна, Росія, Ханті-Мансійський автономний округ.

Introduction

The Khanty-Mansi Autonomous Region (=Okrug) or Khantia-Mansia or Ugra is one of the largest Regions in West Siberia (534,800 km²). The basic part of the territory is occupied by swamped taiga. When studying recent Diptera catalogs, I have found that the fauna of the long-legged flies (Dolichopodidae) of Khantia-Mansia remained virtually unstudied (Гричанов и Негроров, 1979; Negrobov, 1991; Grichanov, 2003–2010). The only reliable record of one species, *Hercostomus fugax* (Loew, 1857), is mentioned from the territory of the Region adjacent to the Urals, i.e., from the Shchekur'ya River valley (Малоземов и др., 1997). This paper presents the new records in detail. Most species are widespread across the Palearctic Region or even across the Holarctic Realm, being often recorded in the neighboring territories. The *Chrysotus caerulescens* Negrobov and *Medetera sibirica* Negrobov first finds after description and the easternmost finds of *Argyra spoliata* Kowarz, *Dolichopus acuticornis* Wiedemann and *Medetera senicula* Kowarz also deserve noting. Collecting of the sister species *Rhaphium crassipes* (Meigen) and *R. latimanum* Kahanpää (or phenotypes of the same species?) by the same water trap is also interesting.

Material and Methods

A hand net and yellow water traps were used for collecting. During the collecting trip to the Khantia-Mansia in July-August, 2010, 32 species were found in this territory

by Konstantin Tomkovich (the Zoological Museum of Moscow State University). Mainly wet localities (except tree trunks *Medetera* species were taken from) were explored. The collector of all specimens is Konstantin Tomkovich; his name and the name of the collecting Region are omitted. Specimens examined in this study are deposited in the above-mentioned Museum. The species are illustrated with Zeiss Discovery V-12 stereomicroscope and AxioCam MRc5 camera. General distribution of species is given after Negrobov (1991) and Grichanov (2003–2010).

New records

Argyra spoliata Kowarz, 1879

Material examined. E Ural, 256 m asl., 63.77°N, 59.71°E, 9–11.VII.2010, 1 ♂; E Ural, 622 m asl., 63.818°N, 59.562°E, 6–8.VII.2010, 1 ♂.

Distribution. Austria, Czech Republic, Finland, Norway, Romania, Russia (Leningrad, Khantia-Mansia), Sweden. Type locality: Czech: «bei Marienbad in Bohmen» [= Mariánské Lázně].

Campsicnemus scambus (Fallén, 1823)

Material examined. Mukhino, 60.89°N, 68.70°E, 7–13.VIII.2010, 1 ♂; E Ural, 256 m asl., 63.766°N, 59.716°E, 1–4.VII.2010, 1 ♂; Riv. Ir'yakh, 61.85°N, 69.06°E, 22.VII.2010, 1 ♀; Shapsha env., near river, 30 m asl., 61.087°N, 69.442°E, 14–16.VII.2010, 1 ♂; Shapsha env., forest, 30 m asl., 61.087°N, 69.442°E, 15–16.VII.2010, 1 ♂.

Distribution. Austria, Belarus, Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Latvia,

Lithuania, Netherlands, Norway, Poland, Romania, Russia (Arkhangelsk, Bashkiria, Chelyabinsk, Karelia, Krasnodar, Leningrad, Moscow, Murmansk, Nenetsia, Pskov, Ryazan', Saratov, Ekaterinburg, Tver', Altai, Irkutsk, Khantia-Mansia, Krasnoyarsk, Khabarovsk, Vladivostok, Yamal, S Kamchatka), Slovakia, Sweden, Switzerland, UK, Ukraine (Kherson, Odessa). Type locality: Sweden: Esperod.

Chrysotus aff. *baicalensis* Negrobov et Maslova, 1995

Material examined. E Ural, 256 m asl., 63.77°N, 59.71°E, 9–11.VII.2010, 1 ♂.

Distribution. Russia (Irkutsk, ?Khantia-Mansia). Type locality: Russia: Irkutsk Region, Listvenichnoe.

Chrysotus caeruleus Negrobov, 1980

Material examined. E Ural, 256 m asl., 63.77°N, 59.71°E, 9–11.VII.2010, 1 ♂.

Distribution. Mongolia, Russia (Altai, Buryatia, Khantia-Mansia, Krasnoyarsk, Yakutia, Yamalia). Type locality: Russia: Sob' river, Bol'shoi Ural, Obdorsk [= Salekhard].

Chrysotus viridifemoratus von Roser, 1840 (Fig. 1)

Material examined. E Ural, 256 m asl., 63.766°N, 59.716°E, 1–4.VII.2010, 14 ♂ ♀.

Distribution. Austria, Belgium, Czech Republic, France, Germany, Hungary, Italy, Netherlands, Poland, Romania; Russia (Khantia-Mansia, Krasnoyarsk, Novosibirsk, Yakutia, Yamalia), Slovakia, Switzerland, UK, Ukraine (Carpathiens, Chernovtsy). Type locality: not given [Germany: Württemberg].



Fig. 1. *Chrysotus viridifemoratus* von Roser, male

Dolichopus acuticornis Wiedemann, 1817 (Fig. 2)

Material examined. Riv. Lyamin bridge env., 75 m asl., 61.73°N, 71.03°E, 21.VII.2010, 3 ♂.

Distribution. Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Hungary, Ireland, Latvia, N Kazakhstan, Netherlands, Norway, Poland, Russia (Leningrad, Moscow, Pskov, Voronezh, "Ural", Khantia-Mansia), Romania, Slovakia, Sweden, UK, Ukraine (Cherkasy, Ternopil). Type locality: Germany: Holstein.



Fig. 2. *Dolichopus acuticornis* Wiedemann, male head

Dolichopus annulipes Zetterstedt, 1838

Material examined. E Ural, 256 m asl., 63.77°N, 59.71°E, 9–11.VII.2010, 1 ♂, 1 ♀; E Ural, 622 m asl., 63.818°N, 59.562°E, 6–8.VII.2010, 1 ♂; Lake, 77 asl., 62.66°N, 71.95°E, 24–26.VII.2010, 1 ♀; Seliyarovo env., 50 m asl., 61.467°N, 70.731°E, 17–20.VII.2010, 1 ♂, 1 ♀.

Distribution. Denmark, Estonia, Finland, Latvia, Norway, Russia ("Caucasus", Arkhangelsk, Karelia, Komi, Leningrad, Murmansk, Buryatia, Khantia-Mansia, Magadan, Primorskii Terr., Yakutia, Yamalia), Sweden; Nearctic: Canada and USA: Alaska, Yukon, British Columbia, Ontario to Newfoundland (Labrador), south to New York. Type locality: Sweden: «Lapponia Umensi; Lycksele; Lapponia Dalekarlia».

Dolichopus brevipennis Meigen, 1824

Material examined. Shapsha env., near river, 30 m asl., 61.087°N, 69.442°E, 14–16.VII.2010, 3 ♂.

Distribution. Austria, Belarus, Belgium, China (Xinjiang), Czech Republic, Denmark, Estonia, Finland, France, Germany, Ireland, Italy, N Kazakhstan, Latvia, Lithuania, Netherlands, Norway, Poland, Russia (Adygea, Arkhangelsk, Baskortostan, Kabardino-Balkaria, Karelia, Krasnodar, Kirov, Komi, Leningrad, Moscow, Murmansk, Novgorod, Perm, Pskov, Ryazan, Voronezh, Yaroslavl; Altai, Cis-Baikalia, Khantia-Mansia, Yakutia), Sweden, UK; Nearctic: Canada and USA: Alaska, Yukon, British Columbia, Northwest Terr., Montana, Alberta, Saskatchewan, Quebec, Prince Edward Is, Newfoundland (Labrador). T; Nearctic: type locality: Sweden.

Dolichopus discifer Stannius, 1831

Material examined. Riv. Vats'yavin, 62.695°N, 72.046°E, 25.VII.2010, 1 ♂; E Ural, 256 m asl., 63.766°N, 59.716°E, 1–4.VII.2010, 3 ♂; E Ural, 256 m asl., 63.77°N, 59.71°E, 9–11.VII.2010, 1 ♂, 1 ♀; Riv. Soromlorop'yavin, 77 m asl., 62.650°N, 71.891°E, 26.VII.2010, 1 ♂.

Distribution. Austria, Belgium, Belarus; Bulgaria, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Hungary, Ireland, Italy, N Kazakhstan, Latvia, Lithuania, Netherlands, Norway, Poland, Romania; Russia (Karelia, Komi, Leningrad, Moscow, Murmansk, Novgorod, Vologda, Altai, Baikal, Khantia-Mansia, Khabarovsk, Sakhalin, Primorskii Terr.), Slovakia, Sweden, Switzerland, UK, Ukraine (Kharkiv); Nearctic: Canada and USA: Alaska, British Columbia to Quebec and Nova Scotia, southward to Colorado and New York. Type locality: Germany.

***Dolichopus lepidus* Staeger, 1842**

Material examined. Riv. It'yakh, 61.85°N, 69.06°E, 22.VII.2010, 3 ♂; E Ural, 256 m asl., 63.77°N, 59.71°E, 9–11.VII.2010, 1 ♂; Shapsha env., near river, 30 m asl., 61.087°N, 69.442°E, 14–16.VII.2010, 2 ♂; Lake, 77 asl., 62.66°N, 71.95°E, 24–26.VII.2010, 1 ♂; Riv. Vats'yavin, 62.695°N, 72.046°E, 25.VII.2010, 1 ♂.

Distribution. Austria, Belarus, Belgium, ?Bosnia and Herzegovina, China (Shaanxi, Beijing), ?Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Georgia, Hungary, Ireland, Italy, Kazakhstan, Latvia, ?Macedonia, Mongolia, Netherlands, Norway, Poland, Romania, Russia (Karelia, Krasnodar, Leningrad, Moscow, Murmansk, Novgorod, Pskov, Voronezh, Khantia-Mansia, Primorskii Terr.), Slovakia, ?Slovenia, Spain, Sweden, Switzerland, UK, ?Yugoslavia; Oriental: China. Type locality: Denmark: «Leersoens i Slutningen» [Lersøen nearby Copenhagen].

***Dolichopus linearis* Meigen, 1824**

Material examined. Shapsha env., near river, 30 m asl., 61.087°N, 69.442°E, 14–16.VII.2010, 2 ♂; Mukhino, 60.89°N, 68.70°E, 7–13.VIII.2010, 1 ♂.

Distribution. Austria, Belgium, China (Heilongjiang, Jilin, Beijing, Inner Mongolia, Gansu, Xinjiang, Qinghai), Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Hungary, Ireland, Italy, Kazakhstan, Latvia, Mongolia, Netherlands, Norway, Poland, Romania; Russia (Adygea, Krasnodar, Leningrad, Novgorod, Pskov, Voronezh, Baikal, Khantia-Mansia, Primorskii Terr.), Slovakia, Sweden, Switzerland, UK. Type locality: not given.

***Dolichopus mannerheimi* Zetterstedt, 1838**

Material examined. E Ural, 256 m asl., 63.77°N, 59.71°E, 9–11.VII.2010, 2 ♂; E Ural, 256 m asl., 63.766°N, 59.716°E, 1–4.VII.2010, 1 ♂, 1 ♀.

Distribution. Finland, Mongolia, Norway, Russia (Karelia, Murmansk, Altai, Buryatia, Irkutsk, Kamchatka, Khabarovsk Terr., Khantia-Mansia, Magadan), Sweden, China (Xinjiang, Heilongjiang); Nearctic: Alaska, Yukon. Type locality: Sweden: «Lapponia Umensis, Stensele; Tressunda; Naestansjö; in paroecia Wilhelmina».

***Dolichopus nitidus* Fallén, 1823**

Material examined. Riv. Vats'yavin, 62.695°N, 72.046°E, 25.VII.2010, 1 ♂.

Distribution. Austria, Belarus, Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Japan, Kazakhstan, Latvia, Netherlands, Norway, "Palestine", Poland, Romania, Russia (Karelia, Krasnodar, Leningrad, Lipetsk, Moscow, Novgorod, Voronezh, Khantia-Mansia, Toms, Primorskii Terr.), Slovakia, Spain, Sweden, Switzerland, UK, Ukraine (Kharkiv, Odessa, Ternopil); Oriental: China (Henan, Shanghai). Type locality: not given.

***Dolichopus plumipes* (Scopoli, 1763)**

Material examined. Shapsha env., near river, 30 m asl., 61.087°N, 69.442°E, 14–16.VII.2010, 2 ♂; Mukhino, 60.89°N, 68.70°E, 7–13.VIII.2010, 1 ♂; Lake, 77 asl., 62.66°N, 71.95°E, 24–26.VII.2010, 1 ♂; 73 m asl., 62.10°N, 71.035°E, 29–30.VII.2010, 1 ♂.

Distribution. Khantia-Mansia; throughout Palaearctic and Nearctic Regions; Mexico; Oriental: China, India (Kashmir). Type locality: Slovenija: «Carniolae indigena».

***Dolichopus remipes* Wahlberg, 1839**

Material examined. Riv. It'yakh, 61.85°N, 69.06°E, 22.VII.2010, 1 ♂.

Distribution. Belarus, Denmark, Estonia, Finland, Latvia, Norway, Poland, Russia (Karelia, Leningrad, Khantia-Mansia, Buryatia, Yakutia, S

Kamchatka), Sweden; Nearctic: Canada and USA: Washington, Alberta; Saskatchewan, Manitoba, Ontario, Quebec, Nova Scotia, Maine, Montana, Minnesota, Wisconsin. Type locality: Sweden: Gusum.

***Dolichopus unguilatus* (Linnaeus, 1758)**

Material examined. Shapsha env., near river, 30 m asl., 61.087°N, 69.442°E, 14–16.VII.2010, 4 ♂.

Distribution. Austria, Belarus, Belgium, ?Bosnia and Herzegovina, Bulgaria, China (Xinjiang), Croatia, Czech Republic, Denmark, England, Estonia, Finland, France, Georgia, Germany, Hungary, Ireland, Italy, Kazakhstan, Latvia, Lithuania, Luxembourg, ?Macedonia, Netherlands, Norway, Poland, Romania; Russia (Karelia, Leningrad, Novgorod, Pskov, Vologda; Adygea, Alania, Kabardino-Balkaria, Karachai-Cherkessia, Krasnodar, Kursk, Lipetsk, Moscow, Orenburg, Perm, Tatarstan, Voronezh, Altai, Khantia-Mansia, Khabarovsk); Slovakia, ?Slovenia, Spain, Sweden, Switzerland, Ukraine (Kharkiv, Kiev, Odessa, Ternopil, Carpathia), ?Yugoslavia». Type locality: Europe.

***Dolichopus urbanus* Meigen, 1824**

Material examined. E Ural, 256 m asl., 63.77°N, 59.71°E, 9–11.VII.2010, 1 ♂.

Distribution. Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Ireland, Italy, Latvia, Lithuania, Netherlands, Norway, Poland, Russia (Arkhangelsk, Karelia, Leningrad, Moscow, Murmansk, Voronezh, Kabardino-Balkaria, Karachai-Cherkessia, Krasnodar, S Ural, Khantia-Mansia, Buryatia), Slovakia, Sweden, Switzerland, UK. Type locality: not given.

***Dolichopus zetterstedti* Stenhammar, 1851 (Fig. 3)**

Material examined. Riv. Vats'yavin, 62.695°N, 72.046°E, 25.VII.2010, 3 ♂.

Distribution. Finland, N Kazakhstan, Norway, Russia (Karelia, Leningrad, Murmansk, Khantia-Mansia, Yakutia, Yamalia), Sweden. Type locality: Sweden: Ringstad.



Fig. 3. *Dolichopus zetterstedti* Stenhammar, mal

***Gymnopternus aerosus* (Fallén, 1823)**

Material examined. Lake, 77 asl., 62.66°N, 71.95°E, 24–26.VII.2010, 1 ♂; Riv. Soromlorop'yavin, 77 m asl., 62.650°N, 71.891°E, 26.VII.2010, 1 ♂.

Distribution. Abkhazia, Austria, Belarus, Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland,

Italy, Japan, Kazakhstan, Lithuania, Mongolia, Netherlands, Norway, Poland, Romania, Russia (Adygea, Alania, Karelia, Karachai-Cherkessia, Krasnodar, Leningrad, Lipetsk, Moscow, Murmansk, Novgorod, Pskov, Voronezh, «Ural», Buryatia, Khantia-Mansia, Primorskii Terr.), Slovakia, Sweden, Tajikistan, UK, Ukraine (Chernovtsy, Kherson, Odessa, Uzhhorod); Oriental: Taiwan. Type locality: not given [Sweden].

Gymnopternus brevicornis (Loew, 1857)

Material examined. Riv. Lyamin bridge env., 75 m asl., 61.73°N, 71.03°E, 21.VII.2010, 1 ♂.

Distribution. Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Hungary, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Poland, Romania, Russia (Karelia, Leningrad, Murmansk, Voronezh, «Ural», Altai, Khantia-Mansia, Primorskii Terr.), Sweden, Switzerland, UK, Ukraine (Carpathians, Odessa). Type locality: not given [Denmark].

Medetera senicula Kowarz, 1877

Material examined. Seliyarovo env., 50 m asl., 61.467°N, 70.731°E, 17–20.VII.2010, 2 ♀.

Distribution. Belgium, Denmark, Estonia, Finland, France, Germany, Poland, Russia (Karelia, Leningrad, Khantia-Mansia), Sweden, UK. Type locality: Poland: «Südwestliche Polen».

Medetera sibirica Negrobov, 1972 (Figs. 4–5)

Material examined. Riv. It'yakh, 61.85°N, 69.06°E, 22.VII.2010, 1 ♂; Lake, 77 asl., 62.66°N, 71.95°E, 24–26.VII.2010, 1 ♂.

Distribution. E Russia: Khantia-Mansia, Novosibirsk. Type locality: Russia: «Sibirien, Geb. Novosibirsk, Distr. Togutshinski, Koyrak».



Fig. 4. *Medetera sibirica* Negrobov, male habitus

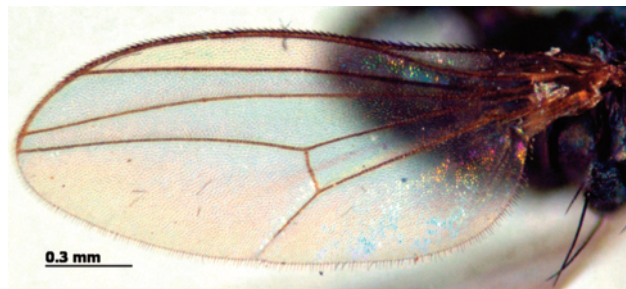


Fig. 5. *Medetera sibirica* Negrobov, male wing

Remark. The specimen examined is the closest to *M. sibirica* by habitus and genital morphology as described by Negrobov, Stackelberg (1974), differing in pale rather than black proepimeral setae.

Medetera signaticornis Loew, 1857

Material examined. E Ural, 256 m asl., 63.766°N, 59.716°E, 1–4.VII.2010, 1 ♂.

Distribution. Austria, Belarus, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Italy, Japan, Latvia, Lithuania, Mongolia, Norway, Poland, Russia (Arkhangel'sk, Krasnodar, Leningrad, Murmansk, Novosibirsk, Perm', Voronezh, Middle Volga, Khantia-Mansia, Primorskii Terr., Tuva), Sweden, Switzerland, Ukraine (Crimea, Carpathia); Nearctic: Canada and USA: Alaska, Yukon, Northwest Terr., British Columbia, Washington, Oregon, Idaho, Alberta, Wyoming, Manitoba, Ontario, Michigan, Indiana, Quebec, New York, Pennsylvania, New Brunswick, Maine, Prince Edward Is. Type locality: ?Germany.

Medetera veles Loew, 1861

Material examined. Shapsha env., near river, 30 m asl., 61.087°N, 69.442°E, 14–16.VII.2010, 1 ♂.

Distribution. Belgium, Czech Republic, Finland, Kazakhstan, Norway, Russia (Arkhangel'sk, Karelia, Leningrad, Lipetsk, Murmansk, Perm', Voronezh, Khantia-Mansia, Primorskii Terr., Yakutia), Sweden, UK; Oriental: Japan (Ryukyu); Nearctic: throughout Canada and USA, Bermuda, Mexico; Neotropical: Mexico. Type locality: USA: Florida.

Neurigona pallida (Fallén, 1823)

Material examined. Near river Baybalakovskaya, 60.97°N, 68.62°E, 6.VIII.2010, 1 ♂; Mukhino, 60.89°N, 68.70°E, 7–13.VIII.2010, 1 ♂.

Distribution. Austria, Belarus, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Latvia, Lithuania, Netherlands, Norway, Poland, Romania; S Russia (Karelia, Karachai-Cherkessia, Leningrad, Lipetsk, Moscow, Orenburg, Voronezh, Khantia-Mansia, Toms), Slovakia, Sweden, Switzerland, UK, Ukraine (Crimea, Kharkiv). Type locality: Sweden: Scania [= Skane].

Rhaphium crassipes (Meigen, 1824)

Material examined. E Ural, 256 m asl., 63.77°N, 59.71°E, 9–11.VII.2010, 1 ♂.

Distribution. Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Latvia, Netherlands, Norway, Poland, Romania, Russia (Arkhangelsk, Karelia, Leningrad, Lipetsk, Moscow, Murmansk, Nenetsia, Voronezh, Adygea, Alania, Karachai-Cherkessia, Krasnodar, Baikal, Irkutsk, Kamchatka, Khantia-Mansia, Krasnoyarsk, Primorskii Terr., Yamalia), Slovakia, Sweden, Switzerland, UK; Nearctic: Canada: Yukon Terr., Northwest Terr., British Columbia, Alberta to Quebec; USA: Alaska. Type locality: not given.

Rhaphium dichromum Negrobov, 1976

Material examined. E Ural, 256 m asl., 63.77°N, 59.71°E, 9–11.VII.2010, 2 ♂.

Distribution. Russia (Murmansk, Altai, Buryatia, Khantia-Mansia, Magadan). Type locality: Russia: Buryatskaya ASSR, Barguzinskii Reserve.

Rhaphium elegantulum (Meigen, 1824)

Material examined. Riv. It'yakh, 61.85°N, 69.06°E, 22.VII.2010, 1 ♂, 1 ♀; Shapsha env., near river, 30 m asl., 61.087°N, 69.442°E, 14–16.VII.2010, 4 ♂.

Distribution. Austria, Belarus, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Ireland, Latvia, Moldova, Netherlands, Norway, Poland, Romania, Russia (Karelia, Krasnodar, Leningrad, Murmansk, Voronezh, «Polar Ural», «Igarka», Baikal, Kamchatka, Khantia-Mansia, Krasnoyarsk), Spain, Sweden, UK; Nearctic: USA and Canada: Alaska, Oregon, Idaho, Colorado, Quebec to Nova Scotia and New Brunswick, southward to New York and New Hampshire. Type locality: Germany: Hamburg.

***Rhaphium glaciale* (Ringdahl, 1920) (Fig. 6)**

Material examined. E Ural, 256 m asl., 63.77°N, 59.71°E, 9–11.VII.2010, 1 ♂; Riv. It'yakh, 61.85°N, 69.06°E, 22.VII.2010, 4 ♂; E Ural, 256 m asl., 63.766°N, 59.716°E, 1–4.VII.2010, 2 ♂, 1 ♀.

Distribution. Finland, Norway, Russia (Murmansk, Baikal, Khantia-Mansia, Krasnoyarsk, Magadan, Yakutia), Sweden; Nearctic: «North America». Type locality: Sweden: Lappland, nr Torneträsk; Jämtland, Wällista.



Fig. 6. *Rhaphium glaciale* (Ringdahl), male

***Rhaphium latimanum* Kahanpää, 2007**

Material examined. E Ural, 256 m asl., 63.77°N, 59.71°E, 9–11.VII.2010, 1 ♂.

Distribution. Finland, Russia (Khantia-Mansia, Yamalia, Yakutia, Magadan). Type locality: Finland: Kilpisjärvi.

***Rhaphium umbripenne* (Frey, 1915) (Fig. 7)**

Material examined. Mukhino, 60.89°N, 68.70°E, 7–13.VIII.2010, 1 ♂.

Distribution. Finland, Norway, Russia (Karelia, Leningrad, Murmansk, Kamchatka, Khantia-Mansia), Sweden; Nearctic: «North America». Type locality: Finland: Mäntsälä, Metsäpirtti, Paadama, Yläne, Tavastehus, Kuopio, Tuovilanlahti, Ilomantsi, Jacobstad, Säräisniemi, Kuusamo, Muonio, Enontekis, Kantalaks, Ponoj, Fl. Voronje; Russia: Kola Peninsula.



Fig. 7. *Rhaphium umbripenne* (Frey), male

***Thrypticus intercedens* Negrobov, 1967 (Fig. 8)**

Material examined. Shapsha env., near river, 30 m asl., 61.087°N, 69.442°E, 14–16.VII.2010, 2 ♂.



Fig. 8. *Thrypticus intercedens* Negrobov, male

Distribution. Finland, France, Germany, Iran [Negrobov, 1991], Norway, Russia (Yaroslavl, Khantia-Mansia, Sayan Mnts., Yakutia), Sweden. Type locality: Russia: Borok, Jaroslavl' Region.

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Сирфиды (Diptera, Syrphidae) «Стрельцовой степи» (Украина)

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Попов Г. В. Сирфиды (Diptera, Syrphidae) «Стрільцівського степу» (Україна). Резюме. Дано огляд відомої фауни мух-сирфід відділення «Стрільцівський степ» Луганського природного заповідника (54 види). Вперше для відділення наведено 34 види, для Луганської області — 8, для Лівобережної України — *Heringia senilis* Sack, 1938 та для України — *Eupeodes nuba* (Wiedemann, 1830).

Ключові слова: мухи-дзюрчалки, Diptera, Syrphidae, Україна, Луганська область, «Стрільцівський степ»

Попов Г. В. Сирфиды (Diptera, Syrphidae) «Стрельцовой степи» (Украина). Резюме. Дан обзор известной фауны мух-сирфид отделения «Стрельцовская степь» Луганского природного заповедника (54 вида). Впервые для отделения указываются 34 вида, для Луганской области — 8, для Левобережной Украины — *Heringia senilis* Sack, 1938 и для Украины — *Eupeodes nuba* (Wiedemann, 1830).

Ключевые слова: мухи-журчалки, Diptera, Syrphidae, Украина, Луганская область, «Стрельцовская степь»

Popov G. V. Syrphids (Diptera, Syrphidae) of "Striltsivsky Step" (Ukraine). Summary. Syrphid flies fauna of Striltsivsky Step branch of Lugansk Nature Reserve (54 species) is reviewed. Thirty-four species are recorded for the first time from the branch, of them eight for the first time from Lugansk Region, *Heringia senilis* Sack, 1938 is new for the Left-Bank (Trans-Dnieper) Ukraine, and *Eupeodes nuba* (Wiedemann, 1830) is recorded for the first time from Ukraine.

Key words: hover-flies, Diptera, Syrphidae, Ukraine, Lugansk Region, "Striltsivsky Step".

Введение

Фауна мух-журчалок отделения «Стрельцовская степь» (49°17'N 40°04'E) Луганского природного заповедника относительно полно изучена (Леженина, 1983, 1985, 1987). Данные о видовом составе сирфид в других частях Луганской области также представлены в литературе (Скуфьин, Булли, 1987; Леженина, 2002; Попов и др., 2002), причем сборы, упомянутые в первой статье, проводились в окрестностях г. Луганска (48°34'N 39°18'E), в том числе в пос. Красный Яр (48°17'N 39°28'E) и около ст. Ольховая (48°40'N 39°34'E); во второй — на крайнем юге Луганской области — в окрестностях пос. Дьяково (47°56'N, 39°08'E), пос. Нижний Нагольчик (48°01'N 39°03'E) и г. Антрацита (48°07'N 39°05'E); в третьей — в отделении «Станционно-Луганское» (48°41'N 39°23'E) Луганского природного заповедника.

Материал и методы

Автор собирал сирфид на территории Стрельцовой степи 24–29 июля 2010 г. Сборы проводились по стандартной методике отлова энтомологическим сачком преимущественно на опушках пойменного леса по р. Черпаха, часть экземпляров собрана на территории т. н. «21 ставка», расположенного в охранной зоне отделения, но вдали от р. Черпахи. Всего было собрано 122 экземпляра имаго. Помимо своих сборов, автор имел возможность изучить собранные в Стрельцовой степи экземпляры сир-

фид из других коллекций, в том числе хранящихся в Харьковском отделении Украинского энтомологического общества (далее ХЭО) (Харьков) и Зоологическом институте РАН (далее ЗИН) (Санкт-Петербург). Также были изучены экземпляры из коллекции сирфид с востока Донецкой (г. Торез, 48°01'N 38°37'E) и юга Луганской областей (пос. Дьяково, 47°56'N, 39°08'E; пос. Орехово = Ореховая балка, 48°02'N 39°09'E), любезно предоставленные С. В. Коноваловым (пос. Трехизбенка, Луганская обл.). Все изученные экземпляры определены или переопределены автором.

Ниже приведен аннотированный список всех известных для отделения видов с литературными данными по Луганской области, описанием материала, замечаниями и следующими обозначениями: впервые для «Стрельцовой степи» — *, впервые для Луганской области — **, впервые для Левобережной Украины — ***, впервые для Украины — ****, известен только по сборам до 2010 г. — †. В «Материале», если нет дополнительных уточнений, имеются в виду экземпляры, собранные автором в «Стрельцовой степи» в 2010 г. Помимо указанных выше точек сбора, в списке упоминается отделение «Провальская степь» (западный участок 48°08' N 39°49' E, восточный участок 48°09'N 39°53'E) Луганского природного заповедника и г. Сватово (49°24'N, 38°09'E). Сборы С. И. Медведева и И. П. Лежениной хранятся в фондах ХЭО, С. В. Коновалова — в частной коллекции этого сборщика, Г. В. Попова — в коллекции автора, хранящейся в Донецком ботаническом саду НАН Украины. В списке автор следует общепринятой классификации Syrphidae (Thompson, 1981; Peck, 1988; Rotheray & Gilbert, 1989; Hurkmans, 1993; Iliff & Chandler, 2000; Hippa et al., 2001; Sommaggio, 2002; van Veen, 2010).

**Аннотированный список видов Syrphidae
отделения «Стрельцовская степь» Луганского природного заповедника**

Подсемейство Eristalinae

доходит в своем распространении почти до берегов Черного и Азовского морей.

1. *Ceriana conopsoidea* (Linnaeus, 1758) *

Литература: Леженина, 2002: 156 — юг области; Попов и др., 2002: 172 — «Станично-Луганское».

Материал. 28.07.2010, 1 ♂, 29.07.2010, 2 ♀.

Замечания. Нам известны экземпляры из коллекции С. В. Коновалова (Дьяково, 15.05.2001, 1 ♀, 18.07.2002, 1 ♂, 2.06.2003, 3 ♂ [мелкие]).

2. *Chalcosyrphus (Xylotina) nemorum* (Fabricius, 1805) *

Литература: Леженина, 2002: 156 (*Xylota*) — юг области.

Материал. 25.07.2010, 1 ♂, 1 ♀, 28.07.2010, 2 ♀.

Замечания. Нам известен также по экземплярам из коллекции С. В. Коновалова (Дьяково, 24.07.2000, 1.06.2001, 2 ♀).

3. *Cheilosia proxima* (Zetterstedt, 1843) *

Литература: Леженина, 1985: 217 — «Провальская степь»; Скуфьин, Булли, 1987: 121 — окрестности Луганска; Попов и др., 2002: 173 — «Станично-Луганское».

Материал. 26.07.2010, 1 ♀, 28.07.2010, 1 ♂, 1 ♀.

4. *Cheilosia velutina* Loew, 1840 **

Материал. 25.07.2010, 3 ♀, 28.07.2010, 10 ♂, 2 ♀, 29.07.2010, 12 ♂, 5 ♀.

Замечания. Был известен с Левобережья Украины (Леженина, 1993: 61) и, под вопросом, из Донецкой области (Попов, 1994: 68 — pro «*Cheilosia* aff. *velutina* Loew, 1840», = *C. aerea* Dufour, 1848, partim). Достоверно указывается для фауны юго-востока Украины.

5. *Cheilosia vernalis* (Fallén, 1817)

Литература: Леженина, 1985: 219 — «Стрельцовская степь».

Материал. 25.07.2010, 1 ♀. Материал И. П. Лежениной не изучен.

6. *Chrysogaster cemiteriorum* (Linnaeus, 1758) †

Литература: Леженина, 1985: 221 (как *C. chalybeata* Meigen, 1822) — «Стрельцовская степь».

Материал. Не изучен.

7. *Eristalis (Eoseristalis) abusiva* Collin, 1931 †

Литература: Леженина, 1985: 247 — «Стрельцовская степь».

Материал. Не изучен.

Замечания. В фондах ЗИН хранятся экземпляры вида из Алёшек (46°35'N, 33°02'E, Херсонская обл.) и Коньково (47°19'N, 38°09'E, Донецкая обл.), то есть вид

8. *Eristalis (Eoseristalis) arbustorum* (Linnaeus, 1758) *

Литература: Леженина, 1985: 249 — «Провальская степь», 2002: 156 — юг области; Скуфьин, Булли, 1987: 122 — окр. Луганска; Попов и др., 2002: 174 — «Станично-Луганское».

Материал. 25.07.2010, 1 ♂, 28.07.2010, 2 ♂, 1 ♀.

Замечания. Типичный синантропный вид.

9. *Eristalis (Eoseristalis) interrupta* (Poda, 1761) *

Литература: Леженина, 1985: 252 (pro *E. nemorum*) — «Провальская степь»; Попов и др., 2002: 174 — «Станично-Луганское».

Материал. 27.07.2010, 1 ♂.

10. *Eristalis (Eristalis) tenax* (Linnaeus, 1758)

Литература: Леженина, 1985: 255 — «Провальская степь», «Стрельцовская степь», 2002: 156 — юг области; Скуфьин, Булли, 1987: 122 — окр. Луганска; Попов и др., 2002: 174 — «Станично-Луганское».

Материал. 28.07.2010, 1 ♂.

Замечания. Типичный синантропный вид.

11. *Eumerus sabulonum* (Fallén, 1817) †

Литература: Леженина, 1985: 227 — «Стрельцовская степь».

Материал. Не изучен.

12. *Eumerus sogdianus* Stackelberg, 1952

Литература: Леженина, 1985: 227 — «Стрельцовская степь», 2002: 156 — юг области.

Материал. 26.07.2010, 3 ♂.

13. *Eumerus strigatus* (Fallén, 1817) *

Литература: Леженина, 1985: 227 — «Провальская степь», 2002: 156 — юг области; Скуфьин, Булли, 1987: 122 — окр. Луганска; Попов и др., 2002: 175 — «Станично-Луганское».

Материал. 29.07.2010, 1 ♀.

14. *Eumerus tricolor* (Fabricius, 1798) †

Литература: Леженина, 1985: 228 — «Стрельцовская степь».

Материал. Не изучен.

15. *Helophilus trivittatus* (Fabricius, 1805) *

Литература: Скуфьин, Булли, 1987: 122 — окр. Луганска; Попов и др., 2002: 175 — «Станично-Луганское».

Материал. 27.07.2010, 1 экземпляр (визуально).

16. *Lejogaster metallina* (Fabricius, 1781) †

Литература: Леженина, 1985: 222 — «Стрельцовская степь».
Материал. Не изучен.

17. *Merodon aberrans* Egger, 1860 †

Литература: Леженина, 1985: 239 (partim) — «Станично-Луганское», «Стрельцовская степь»; Попов и др., 2002: 176 — «Станично-Луганское».

Материал. Из материала, упомянутого И. П. Лежениной («Станично-Луганское» 29.06.1982, Леженина, 2 ♂, 1 ♀; «Стрельцовская степь», 30.06, 1.07.1982, Леженина, 4 ♂, 3 ♀), изучены 2 ♀, собранные в «Стрельцовой степи» 1.07.1982; они относятся к разным видам, *M. aberrans* и *M. tener* Sack, 1913.

Замечания. В коллекции С. В. Коновалова хранятся экземпляры вида из Донецкой (Торез, 22.06.2002, 1 ♀) и Луганской областей (Ореховая балка, 21.06.2003, 2 ♂). Таким образом, вид известен в Луганской области в двух отделениях Луганского природного заповедника и на юге области.

18. *Merodon avidus* (Rossi, 1790) †

Литература: Леженина, 1985: 240 («*M. spinipes*», partim) — «Стрельцовская степь», «Провальская степь».

Материал. Из материала по «*M. spinipes*», упомянутого И. П. Лежениной («Стрельцовская степь», 24.08.1949, Медведев, 1 ♂; там же, 30.06, 1.07.1982, Леженина, 2 ♂, 2 ♀; «Провальская степь», 2,31(sic!).06.1952, Медведев, 2 ♂), изучены 1 ♂ (24.08.1949, = *M. tricinctus* Sack, 1913), 1 ♂ (1.07.1982, = *M. avidus*) и 1 ♀ (30.06.1982, = *M. avidus*) из «Стрельцовой степи».

Замечания. В Луганской области достоверно известен только из «Стрельцовой степи». В неизученном материале «*M. spinipes*» могут быть экземпляры *M. nigritarsis* Rondani, 1845 и *M. tener* Sack, 1913.

19. *Merodon nanus* (Sack, 1931) †

Литература: Леженина, 1983: 123, 1985: 240, 1987: 67 — «Стрельцовская степь».

Материал. Из материала, упомянутого в диссертации И. П. Лежениной (1985), — «Стрельцовская степь», 30.06, 1.07.1982, Леженина, 11 ♂, — изучены 7 ♂ (30.06).

Замечания. В Луганской области известен только из «Стрельцовой степи».

20. *Merodon tener* Sack, 1913 †

Литература: Леженина, 1985: 239 (как *M. aberrans*, partim) — «Стрельцовская степь»; Попов и др., 2002: 176 («Станично-Луганское», «Провальская степь», «Стрельцовская степь»).

Материал. «Стрельцовская степь», 1.07.1982, Леженина, 1 ♀ (см. *M. aberrans*).

Замечания. В коллекции С. В. Коновалова хранятся экземпляры вида из Донецкой (Торез, 22.06.2002, 1 ♂ [очень мелкий], 1 ♀ [крупнее]) и Луганской областей (Ореховая балка, 22.05, 21.06.2003, 2 ♂). Таким образом, в Луганской области известен с юга и из трех отделений Луганского природного заповедника («Станично-Луганское», «Провальская степь», «Стрельцовская степь»).

21. *Merodon tricinctus* Sack, 1913 †

Литература: Леженина, 1985: 240 («*M. spinipes*», partim) — «Стрельцовская степь»; Леженина, 1985: 240 (*M. tricincta* Sack, 1913) — «Стрельцовская степь».

Материал. «Стрельцовская степь», 24.08.1949, Медведев, 1 ♂ (*M. tricinctus* Lezhenina det.), 1 ♀ (*M. spinipes* [Леженина det.]) (см. *M. avidus*).

Замечания. В Луганской области известен только из «Стрельцовой степи».

22. *Mesembrius peregrinus* (Loew, 1846) *

Литература: Попов и др., 2002: 176 — «Станично-Луганское».

Материал. 29.07.2010, 1 ♀.

23. *Myathropa florea* (Linnaeus, 1758) *

Литература: Леженина, 1985: 247 — «Провальская степь», 2002: 156 — юг области; Попов и др., 2002: 176 — «Станично-Луганское».

Материал. 28.07.2010, 1 ♂.

24. *Neosciasia interrupta* (Meigen, 1822) **

Материал. 26.07.2010, 1 ♀.

25. *Neosciasia tenur* (Harris, 1778) *

Литература: Леженина, 2002: 156 (*N. dispar* Mg.) — юг области.

Материал. 25.07.2010, 1 ♂, 1 ♀.

26. *Parhelophilus versicolor* (Fabricius, 1794) *

Литература: Леженина, 1985: 246 — «Провальская степь», 2002: 156 — юг области; Попов и др., 2002: 177 — «Станично-Луганское».

Материал. 27.07.2010, 1 ♂, 28.07.2010, 1 ♂, 29.07.2010, 2 ♂.

27. *Psarus abdominalis* (Fabricius, 1794)

Литература: Леженина, 1985: 212 — «Стрельцовская степь», Сватово, 1987: 67 — «Стрельцовская степь»; Попов, 2009 — распространение в Украине, в том числе в Луганской области.

Материал. 28.07.2010, 1 ♀.

Замечания. Занесен в Красную книгу Украины (Попов, 2009). В Луганской области известен только из двух точек (Леженина, 1985: 212, 1987: 67; Попов, 2009). Подтверждено наличие его популяции в заповеднике с 1982 г. — года сбора предыдущего экземпляра (см.: Леженина, 1985: 212).

28. *Spilomyia diophthalma* (Linnaeus, 1758) *

Литература: Попов и др., 2002: 177 — «Станично-Луганское».

Материал. 28.07.2010, 2 ♀, 29.07.2010, 1 ♀.

Замечания. Также известен экземпляр из коллекции С. В. Коновалова (Дьяково, 30.07.2001, 1 ♂).

29. *Syrirta pipiens* (Linnaeus, 1758)

Литература: Леженина, 1985: 236 — «Стрельцовская степь», «Провальская степь»; Скуфьин, Булли, 1987: 122 — окр. Луганска.

Материал. 24.07.2010, 1 ♂, 28.07.2010, 3 ♂, 2 ♀.

Замечания. Типичный синантропный вид.

30. *Tropidia scita* (Harris, [1780]) **

Материал. 24.07.2010, 1 ♂.

31. *Xylota segnis* (Linnaeus, 1758) *

Литература: Попов и др., 2002: 177 — «Станично-Луганское».

Материал. 24.07.2010, 1 ♀ (визуально).

Подсемейство Pipizinae

32. *Heringia (Heringia) senilis* Sack, 1938 ***

Материал. 25.07.2010, 1 ♂.

Замечания. В Украине был известен из Одесской области (Штакельберг, 1970: 48) и Крыма (Зими́на, 1993: 75; Попов, 2003: 459).

33. *Pipiza lugubris* (Fabricius, 1775) **

Материал. 28.07.2010, 1 ♂, 29.07.2010, 2 ♀.

34. *Pipizella maculipennis* (Meigen, 1822) **

Материал. 26.07.2010, 2 ♀, 29.07.2010, 1 ♂.

35. *Pipizella* sp.

Материал. 26.07.2010, 2 ♀.

Замечания. Другой вид, но по самкам достоверно определить нельзя.

Подсемейство Syrphinae

36. *Chrysotoxum bicinctum* (Linnaeus, 1758)

Литература: Леженина, 1985: 198 — «Стрельцовская степь», «Провальская степь», 2002: 155 — юг области; Попов и др., 2002: 179 — «Станично-Луганское».

Материал. 27, 28.07.2010, 2 ♀, 29.07.2010, 3 ♂.

37. *Chrysotoxum cautum* (Harris, [1776]) **

Материал. Хранится в коллекции ЗИН.

38. *Chrysotoxum elegans* Loew, 1841 **

Материал. 24, 28.07.2010, 2 ♀.

39. *Chrysotoxum festivum* (Linnaeus, 1758) *

Литература: Леженина, 2002: 155 — юг области; Попов и др., 2002: 178 (*Ch. arcuatum* (Linnaeus, 1758)) — «Станично-Луганское».

Материал. 25.07.2010, 4 ♀, 26.07.2010, 1 ♀, 28.07.2010, 1 ♀.

40. *Chrysotoxum lineare* Zetterstedt, 1819 *

Литература: Леженина, 1985: 200 — «Станично-Луганское»; Попов и др., 2002: 179 — «Станично-Луганское».

Материал. 29.07.2010, 1 ♀.

41. *Chrysotoxum octomaculatum* Curtis, 1837

Литература: Леженина, 1985: 200 — «Стрельцовская степь», «Провальская степь», 2002: 155 — юг области; Скуфьин, Булли, 1987: 121 — окр. Луганск; Попов и др., 2002: 179 — «Станично-Луганское».

Материал. 25.07.2010, 1 ♀.

42. *Chrysotoxum verralli* Collin, 1940 *

Литература: Попов и др., 2002: 179 — «Станично-Луганское».

Материал. 25.07.2010, 1 ♀, 28.07.2010, 1 ♂, 2 ♀, 29.07.2010, 1 ♂.

43. *Episyrphus balteatus* (De Geer, 1776) *

Литература: Скуфьин, Булли, 1987: 120 (*Syrphus*) — окр. Луганск; Леженина, 2002: 155 — юг области; Попов и др., 2002: 180 — «Станично-Луганское».

Материал. 26.07.2010, 1 ♂.

44. *Eupeodes (Metasyrphus) luniger* (Meigen, 1822) *

Литература: Попов и др., 2002: 180 — «Станично-Луганское».

Материал. 28.07.2010, 1 ♀.

45. *Eupeodes (Metasyrphus) nuba* (Wiedemann, 1830) ****

Материал. 28.07.2010, 1 ♂.

46. *Paragus (Pandasyopthalmus) tibialis* (Fallén, 1817)

Литература: Леженина, 1985: 208 — «Стрельцовская степь».

Материал. 28.07.2010, 1 ♂.

47. *Paragus (Paragus) pecchiolii* Rondani, 1857 **

Материал. 26.07.2010, 1 ♀.

48. *Paragus (Paragus) quadrifasciatus* Meigen, 1822 *

Литература: Леженина, 2002: 155, 157 — юг области.

Материал. 28.07.2010, 1 ♂.

49. *Platycheirus (Platycheirus) fulviventris* (Macquart, 1829) *

Литература: Скуфьин, Булли, 1987: 120 — окр. Луганск; Попов и др., 2002: 181 — «Станично-Луганское».

Материал. 25.07.2010, 1 ♀.

50. *Sphaerophoria rueppelli* (Wiedemann, 1830) *

Литература: Леженина, 2002: 155 — юг Луганской области.

Материал. 28, 29.07.2010, 2 ♂.

51. *Sphaerophoria scripta* (Linnaeus, 1758)

Литература: Леженина, 1985: 195 — «Провальская степь», 197 — «Стрельцовская степь», 2002: 155 — юг Луганской области; Скуфьин, Булли, 1987: 121 — окр. Луганск; Попов и др., 2002: 181 — «Станично-Луганское».

Материал. 25.07.2010, 1 ♂.

52. *Syrphus ribesii* (Linnaeus, 1758) *

Литература: Скуфьин, Булли, 1987: 120 — окр. Луганска; Леженина, 2002: 155 — юг области; Попов и др., 2002: 182 — «Станично-Луганское».

Материал. 28.07.2010, 1 ♀.

Замечания. Все прежние указания видов рода в Украине нуждаются в проверке в связи с ревизией рода (Goeldlin de Tiefenau, 1996).

53. *Syrphus vitripennis* Meigen, 1822 *

Литература: Леженина, 1985: 188 — «Провальская степь», 2002: 155 — юг области; Попов и др., 2002: 182 — «Станично-Луганское».

Материал. 28.07.2010, 1 ♂, 29.07.2010, 1 ♂, 3 ♀.

Замечания. См. *S. ribesii*.

54. *Xanthogramma pedissequum* (Harris, [1776]) *

Литература: Леженина, 1985: 193 — «Провальская степь», 2002: 155 — юг Луганской области; Попов и др., 2002: 182 (рго «*X. pedissequum*», = *X. pedissequum* et *X. stackelbergi*) — «Станично-Луганское».

Материал. 28.07.2010, 2 ♂, 1 ♀, 29.07.2010, 1 ♂.

Замечания. Материал, приводимый И. П. Лежениной (1985: 193, 2002: 155), не изучен. Вид приводится впервые достоверно для Украины, все прошлые указания нуждаются в проверке в связи с наличием похожего вида *X. stackelbergi* Violenovitch, 1975 (Mielczarek et al., в печати).

Выводы

В фауне «Стрельцовой степи» установлено наличие 54 видов сирфид, причем в сборах 2010 года присутствуют 42 вида и еще два вида отмечены только визуально (*Helophilus trivittatus*, *Xylota segnis*). Подтверждено существование в «Стрельцовой степи» популяции краснокнижного вида *Psarus abdominalis* (см.: Попов, 2009). Впервые для отделения указано 34 вида журчалок, из них: впервые для Луганской области — 8 (*Cheilosia velutina*, *Neoascia interrupta*, *Tropidia scita*, *Pipiza lugubris*, *Pipizella maculipennis*, *Chrysotoxum cautum*, *Ch. elegans*, *Paragus pecchiolii*), для Левобережной Украины — 1 (*Heringia senilis*) и для Украины — 1 (*Eupoeodes nuba*).

E. nuba — типичный палеарктическо-афротропический вид, широко распространенный по югу Палеарктики от Канарских островов до Монголии, включая такие регионы, как юг Франции, Балеарские о-ва, Швейцария, Сицилия, страны бывшей Югославии, о. Крит, Кипр, Румыния, Ливан, Израиль, Закавказье, Турция, страны Средней Азии и Афганистан (Peck, 1988; Brădescu, 1991; Maibach et al., 1992; Dirickx, 1994; Rid-diford & Ebejer, 2006; Reemer & Smit, 2007; Ehteshamnia et al., 2010; Khaghaninia et al., 2010).

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The Fruit Flies (Diptera: Tephritidae) in the Fauna of Ardabil Province, with New Records for Iran

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Mohamadzade Namin S., Nozari J. & Najarpour A. The Fruit Flies (Diptera: Tephritidae) in the Fauna of Ardabil Province, with New Records for Iran. Summary. During the study of tephritid flies fauna in Ardabil Province (North-West of Iran), 31 species of 14 genera were found to occur in this region. *Terellia zerovae*, *Tephritis matricariae*, *Tephritis erdemlii* and *Tephritis cometa cometa* are recorded for the first time for Iranian fauna and 6 host plants reported for the first time.

Keywords: Diptera; Tephritidae; Iran; Ardabil Province; new records.

Мохамадзаде-Намин С., Нозарі Дж. і Наджарпур А. Мухи-пестрокрылки (Diptera: Tephritidae) в фауні провінції Ардабиль, с новими указаннями видів для Ірану. Резюме. В ході вивчення фауни провінції Ардабиль (северо-запад Ірану) встановлено, що в цьому районі зустрічається 31 вид із 14 родів мух-пестрокрылок. *Terellia zerovae*, *Tephritis matricariae*, *Tephritis erdemlii* і *Tephritis cometa cometa* отмечены впервые в фауне Ірану, а в качестве кормовых для нескольких видов пестрокрылок впервые отмечены 6 видов растений.

Ключевые слова: Diptera; Tephritidae; Иран; провинция Ардабиль; новые находки.

Мохамадзаде-Намін С., Нозарі Дж. і Наджарпур А. Мухи-осетниці (Diptera: Tephritidae) у фауні провінції Ардабиль, з новими знахідками видів для Ірану. Резюме. Під час вивчення фауни провінції Ардабиль (північний захід Ірану) встановлено, що в цьому районі зустрічається 31 вид з 14 родів мух-осетниць. *Terellia zerovae*, *Tephritis matricariae*, *Tephritis erdemlii* і *Tephritis cometa cometa* зареєстровані вперше в фауні Ірану, а як живителі для кількох видів осетниць вперше наведено 6 видів рослин.

Ключові слова: Diptera; Tephritidae; Иран; провинция Ардабиль; нові знахідки.

Introduction

The family Tephritidae is one of the most economically important Diptera families. More than 4000 species are found throughout the world, but the number of species is greatest in tropical regions (Foote & Steyskal, 1987; Korneyev, 2003).

Ardabil Province is located in North West of Iran, about 70 km from the Caspian Sea and 25 km from Republic of Azerbaijan's border with area about 18,000 km². The maximum temperature reaches to 35°C during the hot summer months. The winters are cold, with a temperature plummeting to -25 °C (provincial health center, unpublished data). Gilasian (2008) recorded *Acanthiophilus helianthi*

Rossi, *Terellia gynaechochroma* Hering, *Terellia luteola* Wiedemann and *Urophora mauritanica* Macquart from Ardabil Province but still the tephritid flies of this province remained poorly known.

Material and methods

Materials are collected by standard sweeping net and rearing from flower heads of asteraceous plants.

Species were identified according to Hendel (1927), Freidberg & Kugler (1989), Merz (1994) and Korneyev & White (1999, 2000).

All the material is deposited in the insect collection of Islamic Azad University Varamin-Pishva Branch (IAUV) and the first author's personal collection (SMNC).

Results

In this study, Thirty-one species from fourteen genera were collected in Ardabil province. *Terellia zerovae*, *Tephritis matricariae*, *Tephritis erdemlii* and *Tephritis cometa* are recorded for the first time for Iranian fauna and 28 species are new for this region.

The subfamilies, tribes, genera and species are listed in alphabetic order. Detailed morphological descriptions are not given. For further information, refer to the works of Hendel (1927), White (1988), Freidberg & Kugler (1989), White, Elson-Harris (1992), Merz (1994) and Korneyev & White (1999).

List of species

Subfamily Trypetinae

Tribe Carpomyini

Rhagoletis cerasi (Linnaeus, 1758)

Hendel, 1927; Korneyev & Merz, 1997.

Material. Namin, 14.07.2010, 1 ♀ (Mohamadzade & Najarpour) (SMNC).

Host plants. Cherries (*Prunus cerasus*, *P. avium*, *P. serotina* and *P. mahaleb*) (Rosaceae) and honeysuckles: *Lonicera tatarica*, *L. xylosteum* (Caprifoliaceae) (Hendel, 1927; White, Elson-Harris, 1992; Merz, 1994).

Distribution. Iran: N., S., W. and E. (Afshar, 1937); Europe, Russia, Kazakhstan, Georgia, (Norrbon *et al.*, 1999).

Subfamily Tephritinae

Tribe Terelliini

Terellia gynaechochroma (Hering, 1937)

Rikhter, 1988; Freidberg & Kugler, 1989 (as *Orellia lappae*).

Material. Khalkhal, on *Onopordum heterocanthum*, 13.07.2010, 1 ♂, 3 ♀; Sabalan mountain, 2700m, 14.07.2010, 1 ♀ (Mohamadzade & Najarpour) (IAUV and SMNC).

Host plants. *Onopordum acanthium*, *O. floccosum* and *O. cynarocephalum* (Rikhter, 1988; Freidberg & Kugler, 1989) (as *Orellia lappae*) and *Onopordum heterocanthum* (possible host plant).

Distribution. Iran: Ardabil, Fars, Kerman, Kurdistan, Qazvin and Tehran (Gilasian, 2007; Mohamadzade Namin *et al.*, 2010) Central and southern Europe, Cyprus, Israel,

Jordan and Syria (Norrbon *et al.*, 1999; Korneyev & Dirlbek, 2000).

Terellia sp. near *luteola* (Wiedemann, 1830)

Material. Ardabil, 5km to Meshkin Shahr, 1320m, N: 38°25.189, E: 47°40.976, reared from flower heads of *Carthamus lanatus* subsp. *turkestanicus*, date of collecting: 14.07.2010, date of exit: 25.07.2010, 4 ♂ (Mohamadzade & Najarpour) (SMNC).

Remark. Wing completely hyaline and without dark spots on abdominal tergites. There are four species of this group in Iran (*T. colon*, *T. luteola*, *T. tristicta* and *T. virpana*), but the morphological difference between populations of each species and their possible host plants aren't studied yet.

Terellia nigronota (Korneyev, 1985)

Korneyev, 1985; Korneyev, 2003.

Material. Sabalan mountain, 2700m, 14.07.2010, 1 ♀ (Mohamadzade & Najarpour) (SMNC).

Host plants. *Arctium* sp. (Korneyev, 2003).

Distribution. Iran: West Azerbaijan (Zarghani *et al.*, 2010 b); Russia, Georgia (Norrbon *et al.*, 1999).

Terellia serratulae (Linnaeus, 1758)

Becker, 1913; Dirlbek & Dirlbeková, 1974; Freidberg & Kugler, 1989.

Material. Namin, 1400m, N: 38°24.892, E: 48°28.065, reared from flower heads of *Carduus onopordioides*, date of collecting: 20.06.2010, date of exit: 13-28.06.2010, 3 ♂, 8 ♀ (Mohamadzade & Najarpour) (IAUV and SMNC).

Host plants. *Carduus acanthoides*, *Ca. defloratus*, *Ca. nutans*, *Cirsium arvense*, *Ci. vulgare*, *Ci. phyllocephalum* (Rikhter, 1988; Freidberg & Kugler, 1989; Merz, 1994) and *Carduus onopordioides* Fisch (new host plant).

Distribution. Iran: Gilan, Khorasan, Kohkiluyeh-Boyer Ahmad, Mazandaran, Tehran, West Azerbaijan (Becker, 1913; Gilasian, 2007; Mohamadzade Namin *et al.*, 2010) British Is., Scandinavia, Kazakhstan, Israel, Syria, Iraq and Africa (Norrbon *et al.*, 1999; Korneyev & Dirlbek, 2000).

Terellia uncinata White, 1989 (Fig. 1)

White, 1989.

Material. Ardabil, 15km to Sarein, 1430m, N: 38°10.601, E: 48°12.528, reared from flower heads of *Centaurea solstitialis*, date of collecting: 10.09.2009, date of exit: 17.09.2009, 5 ♂, 1 ♀ (Mohamadzade) (IAUV and SMNC).

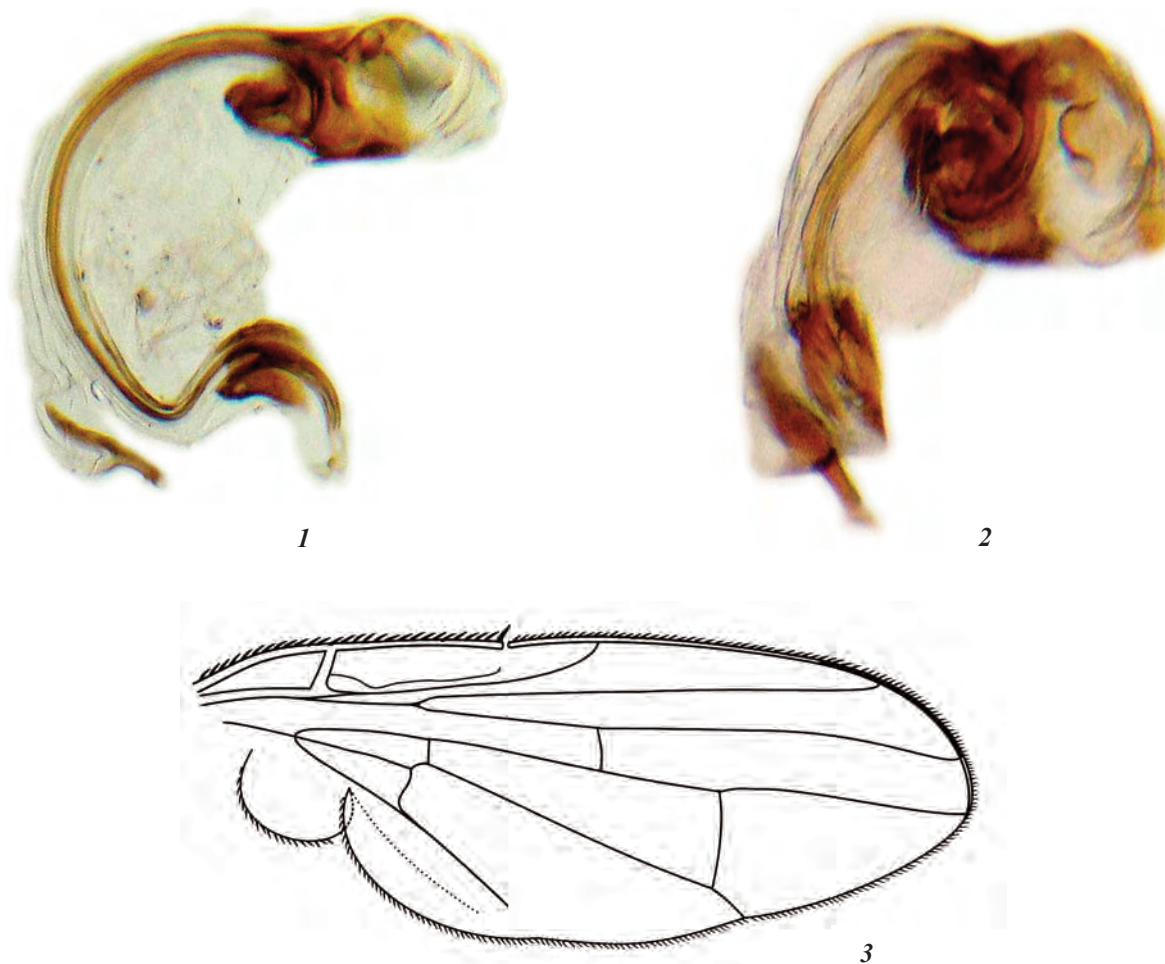
Host plants. *Centaurea nicaeensis* and *C. solstitialis* (White, 1989).

Distribution. Iran: Arak (Haji Ghorbani *et al.*, 2010), Kurdistan (Mohamadzade, unpublished data); Italy, Albania, Bulgaria, Greece and Turkey (Norrbon *et al.*, 1999).

Terellia zerovae Korneyev, 1985 (Fig. 2-3)

Korneyev, 1985; White, 1989.

Material. Namin, 1400m, N: 38°24.892, E: 48°28.065, reared from flower heads of *Centaurea aucheri*, date of collecting: 10.09.2009, date of exit: 14.09.2009, 3 ♂, 1 ♀ (Mohamadzade) (IAUV and SMNC).

Figs. 1–3. *Terellia uncinata* (1) and *T. zerovae* (2–3): glans of phallus (1–2) and wing (3)

Host plants. *Centaurea argentea*, *C. diffusa*, *C. maculosa*, *C. calcitrapa*, *C. iberica*, *C. solstitialis* (White, 1989) and *C. aucheri* (DC.) Wagenitz (new host plant).

Distribution. Romania, Greece, Turkey, Tadjikistan (Norrbon *et al.*, 1999) (new record for Iran).

Diagnosis. Wings completely hyaline (Fig. 3), abdominal tergites with white setae. *Terellia zerovae* is very similar to *T. uncinata* and differ by distiphallus without a long tubular extension (Figs. 1–2).

Tribe Myopitini

Urophora phaeocera (Hering, 1961)

Korneyev & White, 1999.

Material. Khalkhal, 1800m, 13.07.2010, 1 ♀ (Mohamadzade) (IAUV).

Host plants. The larvae develop in flower head of *Cousinia hermonis* (Korneyev & White, 1999).

Distribution. Iran: Chahar Mahal Bakhtiari (Gilasian & Merz, 2008), East Azerbaijan, Tehran, and Yazd (Mohamadzade, unpublished data); Turkey, Armenia, Azerbai-

jan, Middle East, Syria and Jordan (Norrbon *et al.*, 1999; Korneyev & Dirlbek, 2000).

Urophora quadrifasciata sjumorum Rohdendorf, 1934

Korneyev & White, 1999.

Material. Namin, 1400m, N: 38°24.892, E: 48°28.065, reared from flower heads of *Centaurea aucheri*, date of collecting: 10.09.2009, date of exit: 17-20.09.2009, 6 ♂, 7 ♀ (Mohamadzade); Namin, 14.07.2010, 5 ♂, 1 ♀; Sabalan mountain, 14.07.2010, 5 ♂, 7 ♀ (Mohamadzade & Najarpour) (IAUV and SMNC).

Host plants. *Centaurea calcitrapa* and *Centaurea iberica* (Korneyev & White, 1999) *C. aucheri* (DC.) Wagenitz (new host plant).

Distribution. Iran: West Azerbaijan, (Karimpoor & Merz, 2006) Tehran, Kurdistan, (Mohamadzade, unpublished data); Cyprus, Turkey, Armenia, Azerbaijan, Uzbekistan, Turkmenistan, Tajikistan, Kazakhstan, Kirghizia, Israel, Iran, Pakistan and w. China (Norrbon *et al.*, 1999; Korneyev & White, 1999).

Urophora solstitialis (Linnaeus, 1758)

Korneyev & White, 1999.

Material. Namin, Anbaran, 20.06.2010, 5 ♂, 5 ♀; Namin, 14.07.2010, 1 ♂, 5 ♀; Sabalan mountain, 2000m, 14.07.2010, 1 ♂; Sabalan

mountain, reared from flower heads of *Carduus* sp., date of collecting: 14.07.2010, date of exit: 20-23.07.2010, 2 ♂, 2 ♀ (Mohamadzade & Najarpour) (IAUV and SMNC).

Host plants. The larvae develop in flower heads of *Cirsium helenioides*, *Carduus acanthoides*, *Ca. crispus*, *Ca. defloratus*, *Ca. nigrescens*, *Ca. nutans* and *Ca. personata* (Korneyev & White, 2000).

Distribution. Iran: Mazandaran (Dirlbek, Dirlbekova, 1974), East Azerbaijan (Zarghani *et al.*, 2010 b); Italy, France, Britain, Scandinavia and Kazakhstan (Norrbom *et al.*, 1999).

Urophora terebrans (Loew, 1850)

Korneyev & White, 1999.

Material. Khalkhal, 2200m, reared from flower heads of *Onopordum heterocanthum*, date of collecting: 13.07.2010, date of exit: 19-23.07.2010, 4 ♂, 5 ♀; Namin, 1400m, N: 38°24.892, E: 48°28.065, 14.07.2010, 3 ♂, 1 ♀; Sabalan mountain, 2000m, 14.07.2010, 2 ♂, 4 ♀; reared from flower heads of *Cirsium aduncum*, date of collecting: 14.07.2010, date of exit: 18-25.07.2010, 7 ♂, 13 ♀ (Mohamadzade & Najarpour) (IAUV and SMNC).

Host plants. *Carlina vulgaris*, *Cirsium eriophorum*, *Ci. ukranicum*, *Cynara cardunculus*, *Onopordum acanthium* (Korneyev & White, 2000), *Cirsium lappaceum* (Mohamadzade *et al.*, 2010), *Cirsium aduncum* Fisch. & May. and *Onopordum heterocanthum* (new host plants).

Distribution. Iran: Tehran (Mohamadzade *et al.*, 2010); Europe, Russian, Armenia, Azerbaijan and Turkey (Norrbom *et al.*, 1999).

Tribe Noeetini

Ensina sonchi (Linnaeus, 1767)

Zaitzev, 1947.

Material. 1km west Namin, 1400m, N: 38°24.892, E: 48°28.065, 10.09.2009, 2 ♂, 2 ♀ (Mohamadzade) (IAUV and SMNC).

Host plants. The larvae develop in flower heads of *Chondrilla juncea*, *Helminthia echinoides*, *Lactuca* spp., *Picris* sp. and *Scorzonera syriaca* (Freidberg & Kugler, 1989).

Distribution. Iran: Mazandaran (Dirlbek, Dirlbekova, 1974) and Tehran (Mohamadzade Namin *et al.*, 2010); Britain, Scandinavia, Africa, Saudi Arabia; Taiwan, Philippines and Japan (Norrbom *et al.*, 1999; Merz, Dawah, 2005).

Hypenidium roborowskii (Becker, 1908)

Hendel, 1927.

Material. 1km west Namin, 1400m, N: 38°24.892, E: 48°28.065, reared from flower heads of *Lactuca* sp., date of collecting: 10.09.2009, date of exit: 11-12.09.2009, 2 ♂, 1 ♀ (Mohamadzade) (IAUV and SMNC).

Host plants. *Lactuca* sp. (Mohamadzade *et al.*, 2010).

Distribution. Iran: Tehran (Mohamadzade Namin *et al.*, 2010) and Kurdistan (Mohamadzade, unpublished data); Syria, Jordan, Iraq, Afghanistan, Azerbaijan, Middle Asia, and China (Norrbom *et al.*, 1999; Korneyev & Dirlbek, 2000).

Tribe Tephritini

Acanthiophilus helianthi (Rossi, 1794)

Becker, 1913; Hendel, 1927; Freidberg & Kugler, 1989; Merz, 1994.

Material. Ardabil, 5 km to Meshkin shahr, 1400m, N: 38°25.189, E: 47°40.976, reared from *Carthamus lanatus*, date of collecting: 14.07.2010, date of exit: 22.07.2010, 1 ♂, 1 ♀; 1km west Namin, 1400m, N: 38°24.892, E: 48°28.065, 10.09.2009, 1 ♀ (Mohamadzade & Najarpour) (IAUV and SMNC).

Host plants. The larvae develop in flower heads of *Carthamus tinctorius*, *Cart. glaucus*, *Centaurea iberica* and *Carduus* sp. (Asteraceae) (Merz, 1994) *Cart. lanatus* Linnaeus (new host plant).

Distribution. Iran: Ardabil, West and East Azerbaijan, Fars, Golestan, Hamedan, Khuzestan, Sistan & Baluchestan, Tehran, Zanjan (Gilasian, 2006) Mazandaran (Dirlbek & Dirlbekova, 1974), Kurdistan and Yazd (Mohamadzade, unpublished data); Europe, Syria, Saudi Arabia, UAE, Afghanistan, Thailand and Africa (Norrbom *et al.*, 1999; Korneyev & Dirlbek, 2000; Merz & Dawah, 2005; Merz, 2008).

Campiglossa producta (Loew, 1844)

Hendel, 1927; Zaitzev, 1947; Freidberg & Kugler, 1989.

Material. Namin, 1400m, N: 38°24.892, E: 48°28.065, reared from *Lactuca* sp., date of collecting: 14.07.2010, date of exit: 24.07.2010, 1 ♂, 1 ♀; Sabalan mountain, 14.07.2010, 1 ♂; Namin, 14.07.2010, 2 ♂ (Mohamadzade & Najarpour) (IAUV and SMNC).

Host plants. *Chondrilla juncea*, *Crepis* spp., *Leontodon* spp., *Hieracium* spp., (Merz, 1994) and *Sonchus arvensis*.

Distribution. Iran: Fars, Golestan, Khuzestan, Lorestan, Tehran, West and East Azerbaijan (Gilasian, 2007) Europe, Middle Asia, Israel, Syria, Jordan, Iraq, Afghanistan, Africa and Canary Is. (Norrbom *et al.*, 1999; Korneyev & Dirlbek, 2000).

Dioxyna bidentis (Robineau-Desvoidy, 1830)

Hendel, 1927; Hering, 1956; Freidberg & Kugler, 1989.

Material. Khalkhal, 13.007.2010, 5 ♂, 2 ♀; Namin, 1400m, N: 38°24.892, E: 48°28.065, 14.07.2010, 2 ♀; Sabalan mountain, 14.07.2010, 1 ♂, 2 ♀ (Mohamadzade & Najarpour) (IAUV and SMNC).

Host plants. The larvae develop in *Bidens* sp. and *Tagetes* sp. (Asteraceae) (Merz, 1994).

Distribution. East Azerbaijan (Zaitzev, 1947) Qazvin, Gilan (Gilasian, 2007), Tehran (Mohamadzade Namin *et al.*, 2010); Europe, Israel, Syria, Jordan, Iraq, Afghanistan, Africa and Canary Is. (Norrbom *et al.*, 1999; Korneyev & Dirlbek, 2000).

Euaresta bullans (Wiedemann, 1830)

Hendel, 1927; Richter, 1988; Freidberg & Kugler, 1989; Korneyev & Dirlbek, 2000.

Material. 1 km W Namin, 1400m, N: 38°24.892, E: 48°28.065, Reared from *Xanthium spinosum*, date of collecting: 16.09.2008, date of exit: 22.09.2008, 3 ♀; 5km east Meshkin shahr, 1300m, N: 38°25.189, E: 47°40.976, date of collecting: 16.09.2008, date of exit: 20.09.2008, 7 ♂, 7 ♀; 15km east Meshkin shahr, 1300m, 20.09.2008, 3 ♂, 5 ♀ (Mohamadzade) (IAUV).

Distribution. Iran: Ardabil, East and West Azerbaijan (Mohamadzade Namin & Nozari, in press); Southern Europe from Spain to Southern Ukraine, Turkey, Israel, North America, South America, Southern Africa, Australia (Norrbom *et al.*, 1999).

***Heringina gutatta* (Fallen, 1814)**

Rikhter, 1988.

Material. Khalkhal, 13.07.2010, 1 ♀ (Mohamadzade) (SMNC).**Host plants.** The larvae develop in flower head galls on *Anthemis arvensis*, *Leucanthemum vulgare*, *Cirsium palustre*, *Hieracium sabaudum* and *Helichrysum arenarium* (Rikhter, 1988; Merz, 1994).**Distribution.** Iran: East Azerbaijan (Zaitzev, 1947); Sweden, Finland, Ukraine and Kazakhstan (Norrbon *et al.*, 1999).***Sphenella marginata* (Fallén, 1814)**

Freidberg & Kugler, 1989.

Material. Khalkhal, 13.07.2010, 1 ♂; Sabalan mountain, 14.07.2010, 3 ♂, 1 ♀ (Mohamadzade & Najarpour) (IAUV and SMNC).**Host plants.** *Senecio alpinus*, *S. erucifolius*, *S. jacobaea*, *S. rupestris*, *S. viscosus*, *S. vulgaris* (Merz, 1994).**Distribution.** Iran: Kurdistan (Mohamadzade Namin & Nozari, in press) and Teharn (Mohamadzade, unpublished data); Europe, Asian Russia (West Siberia), Egypt, Israel, Afghanistan (Norrbon *et al.*, 1999; Freidberg & Kugler, 1989).***Tephritis bardanae* (Schrank, 1803)**

Hendel, 1927; Zaitzev, 1947; Dirlbek, 1980; Foote, 1984; Gilasian & Merz, 2008.

Material. Ardabil, 5 km to Sarein, 1600m, N: 38°07.410, E: 48°07.047, 11.09.2009, 1 ♀ (Mohamadzade) (SMNC).**Host plants.** *Arctium minus* (Merz, 1994).**Distribution.** Iran: Tehran (Gilasian & Merz, 2008); Europe, Britain, Caucasus and Transcaucasia Kazakhstan and Middle Asia. (Norrbon *et al.*, 1999).***Tephritis cometa cometa* (Loew, 1840)**

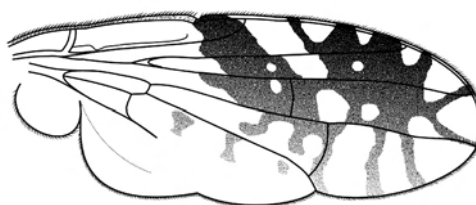
Hendel, 1927; Merz, 1994.

Material. Sabalan mountain, 27.07.2010, 1 ♀; Sabalan mountain, 2500m, reared from flower heads of *Cirsium* sp., date of collecting: 27.07.2010, date of exit: 4-9.08.2010, 4 ♂, 6 ♀ (Mohamadzade & Najarpour) (IAUV and SMNC).**Host plants.** Larvae in *Arnica montana*, *Aster bellidiflorum* and *Cirsium* spp. (White, 1988; Merz, 1994).**Distribution.** Iran: Tehran (Mohamadzade Namin *et al.*, 2010); Europe, Israel, Afghanistan, Kazakhstan, Mongolia, China (Norrbon *et al.*, 1999) (new subspecies for Iran).***Tephritis dioscurea* (Loew, 1856)**

Rikhter, 1988.

Material. Sabalan mountain, 2500m, 14.07.2010, 1 ♂ (Mohamadzade & Najarpour) (SMNC).**Host plants.** Larvae in flower heads of *Achillea millefolium*, *Artemisia absinthium*, *Ar. crithmifolia* and *Crepis* sp. (Rikhter, 1988).**Distribution.** Iran: West Azerbaijan (Zarghani *et al.*, 2010 a); Sweden and France to Kazakhstan and Russia (Norrbon *et al.*, 1999).***Tephritis erdemlii* Kutuk, 2008 (Fig. 4)**

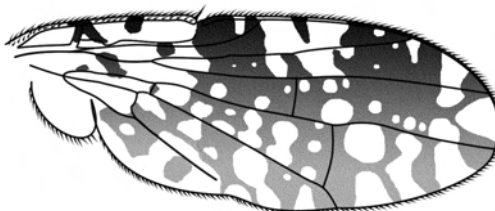
Kutuk, 2008.

Material. Sabalan mountain, 2500m, 14.07.2010, 1 ♀ on *Cirsium* sp. (Mohamadzade & Najarpour) (SMNC).**Host plants.** Probably *Cirsium vulgare* (Kutuk, 2008).**Distribution.** Turkey (Kutuk, 2008) (new record for Iran).**Diagnosis:** This species has long oviscapae and black setae. Wing pattern of *T. erdemlii* (Fig. 4) is similar to that of *T. acanthiophilopsis*, *T. cometa israelis* and *T. oedipus* but in *T. acanthiophilopsis* oviscapae is twice shorter; in *T. cometa israelis*, only one hyaline spot extending to vein R₂₊₃ and oviscapae is shorter; in *T. oedipus*, setae and oviscapae are yellowish and oviscapae is shorter; aculeus shape is quite a diagnostic character.Fig. 4. *Tephritis erdemlii*, wing.***Tephritis formosa* (Loew, 1844)**

Freidberg & Kugler, 1989.

Material. Namin, 1400m, N: 38°24.892, E: 48°28.065, 14.07.2010, 1 ♂ (Mohamadzade & Najarpour) (SMNC).**Host plants.** In Europe reared from *Sonchus asper*, *S. oleraceus*, *Hypochaeris radicata* and *Crepis virens* (Merz, 1994).**Distribution.** Iran: Mazandaran (Dirlbek, Dirlbekova, 1974), Tehran (Mohamadzade Namin *et al.*, 2010); Europe, except Scandinavia, to Israel (Norrbon *et al.*, 1999).***Tephritis hurvitzii* Freidberg, 1981**

Hendel, 1927; Freidberg & Kugler, 1989; Merz, 1994.

Material. Sabalan mountain, 2000m, 14.07.2010, 1 ♀ (Mohamadzade & Najarpour) (IAUV).**Host plants.** The larvae develop in stem galls on *Scorzonera syriaca* and *Tragopogon longirostris* (Freidberg & Kugler, 1989).**Distribution.** Iran: West Azerbaijan (Gilasian, 2007) and Tehran (Mohamadzade Namin *et al.*, 2010); Europe, Middle Asia, Israel, Syria, Jordan, Lebanon and Iraq (Norrbon *et al.*, 1999; Korneyev & Dirlbek, 2000).***Tephritis matricariae* (Loew, 1844) (Fig. 5)****Material.** Sabalan mountain, 2500m, 14.07.2010, 1 ♂ (Mohamadzade & Najarpour) (SMNC).**Host plants.** Flower heads of *Hieracium pilosella* and *H. lactuella* (Rikhter, 1988; Merz, 1994).**Distribution.** Netherlands, Austria, Balkans, Turkey, Egypt (Norrbon *et al.*, 1999) (new record for Iran).Fig. 5. *Tephritis matricariae*, wing.

Diagnosis. Wing pattern reticulated: 3 hyaline spots in cell r_{2+3} connected with 2 hyaline spots of cell r_1 ; 2 black spots at the end of R_{4+5} and M connected with main dark field (Fig. 5). Abdominal tergites with white setulae, except tergite 5 with row of long black marginal setae.

Tephritis postica (Loew, 1844)

Freidberg & Kugler, 1989.

Material. Sabalan mountain, 2500m, 14.07.2010, 3 ♂, 2 ♀ (Mohamadzade & Najarpour) (IAUV and SMNC).

Host plants. *Onopordum acanthium* and *O. heterocanthum* in Iran (Mohamadzade *et al.*, 2010)

Distribution. Iran: Esfahan, Hamedan, Kermanshah, Khorasan Razavi, Semnan, Tehran, Zanjan, (Gilasian, 2007) Kurdistan and Yazd (Mohamadzade, unpublished data); Europe, Israel, Uzbekistan and Africa (Norrbom *et al.*, 1999).

Tephritis praecox (Loew, 1844)

Hendel, 1927; Freidberg & Kugler, 1989.

Material. Sabalan mountain, 2500m, 14.07.2010, 1 ♂ (Mohamadzade & Najarpour) (SMNC).

Host plants. Flower heads of *Calendula arvensis* (Merz, 1994).

Distribution. Iran: Tehran (Mohamadzade Namin *et al.*, 2010); Europe, Israel, Syria, Iraq, Uzbekistan and Africa (Norrbom *et al.*, 1999; Korneyev & Dirlbek, 2000).

Tephritomyia lauta (Loew, 1869)

Dirlbek, 1980.

Material. Khalkhal, 13.07.2010, 1 ♀; Sabalan mountain, 2500m, 14.07.2010, 1 ♀ (Mohamadzade & Najarpour) (IAUV and SMNC).

Host plants. Flower heads of *Echinops viscosus* (Freidberg & Kugler, 1989).

Distribution. Iran: Tehran (Mohamadzade Namin *et al.*, 2010); Greece, Israel, Tunisia and Egypt (Norrbom *et al.*, 1999).

Trupanea amoena (Frauenfeld, 1857)

Hendel, 1927; Zaitzev, 1947; Dirlbek, 1980; Freidberg & Kugler, 1989.

Material. Parsabad, 12.07.2010, 1 ♂ (Mohamadzade) (IAUV).

Host plants. *Lactuca* sp., *Picris hieracioides*, *Sonchus* sp. (Merz, 1994).

Distribution. Iran: East Azerbaijan (Zaitzev, 1947), Khorasan Jonubi, Sistan and Baluchestan (Hering, 1956), Tehran (Gilasian, 2007); Europe, Israel, Syria, Iraq, Saudi Arabia and UAE (Norrbom *et al.*, 1999; Korneyev & Dirlbek, 2000; Merz & Dawah, 2005; Merz, 2008).

Trupanea stellata (Fuesslin, 1775)

Becker, 1913; Hendel, 1927; Zaitzev, 1947; Dirlbek, 1980; Freidberg & Kugler, 1989.

Material. 1 km west Namin, 1400m, N: 38°24.892, E: 48°28.065, 10.09.2010, 1 ♀; Ardabil, 15km to Meshkin shahr, 14.07.2010, 1 ♂ (Mohamadzade & Najarpour) (IAUV and SMNC).

Host plants. The larvae develop in flower heads of *Senecio* spp., *Artemisia judaica*, *Inula graveolens* and *I. viscosa* in Israel (Freidberg & Kugler, 1989). In Europe reared from *Anthemis* spp., *Aster* sp., *Bidens* sp., *Centaurea* spp., *Crepis* spp., *Inula* sp., *Picris* sp., *Senecio* sp. and *Serratula* sp. (Merz, 1994).

Distribution. Iran: Kerman, Sistan and Baluchestan (Dirlbek, 1980), Kermanshah, Tehran, (Gilasian, 2007),

East and West Azerbaijan, Kurdistan and Yazd (Mohamadzade, unpublished data); Europe, Israel, Iraq, Armenia, Saudi Arabia, India, Mongolia and Africa (Norrbom *et al.*, 1999; Korneyev & Dirlbek, 2000; Merz, Dawah, 2005).

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